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THE NEWSPAPER OF THE INDUSTRY

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INSIDE DOPE

by GEORGE F. TAUBENECK

Story of the Week
Gags of the Week
Right as Rain
What's the Psychological Angle?
Quips from Abroad
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Verse of the Week
Oh, for a Child-Tending Appliance!
Game of the Month
Worrisome Thought

Story of the Week

Soon after the late CIO prexy Philip Murray visited the White House for the last time, he died. Walter Reuther succeeded him.

At that White House conference Truman had guyed Murray:

"If you don't look out, Reuther will get your job."

Replied wise old Phil, according to reliable testimony:

"Mr. President, he's gunning for *your* job. Mine is but a stepping-stone."

(Put this down in your "future book.")

Gags of the Week

Of an all-night movie house which specialized in thrill pictures a critic observed:

"No hits, no runs, just terrors."

Did you hear about the man whose cat was run over by a steamroller?

He just stood there with a long puss.

Television certainly helps you get acquainted with a lot of new people. Mostly repairmen.

Right as Rain

A village idler was heckled: "Must be pretty dull to sit here all day and do nothing but whittle."

"Uh hum," admitted Uncle Fred, "I'm mostly thinkin'."

"Do you mean you can sit and do nothing but think—and not get bored?"

"That's right, thinkin' is a lot like sin. Them that don't is scared of it. Them that do it enough finally get so they *like* it."—*True Magazine.*

What's the Psychological Angle?

When you're impatiently caught in a long line of cars moving slowly, observes Don Slutz of the Traffic Safety Association, "you can bet that the driver in front who is stalling traffic is smoking a pipe or wearing a cap."

There's room for many hours of conversation in this thought. Try it on your buddies.

Quips from Abroad

Thanks to Britain's austerity program, cobblers no longer wrap half-soled shoes. A Gloucester man trudged home with a pair of repaired woman's pumps (his wife's) in his hand.

"Goodo," congratulated an Australian visitor, who spied hubby with the naked female shoes. "Never let 'em gad about, I always say."

Upon arriving at the St. Lazare station in Paris, a tourist asked a clerk where he could find the American "colony."

The clerk thought it over, then replied: "If you want to know, it's the first five rows of the *Folies-Bergere.*"

Whether by accident or intent, the 1952 Oxford Press catalog lists a book on horticulture under the categorical heading, *Government.*

Its title:

"The Grafter's Handbook."

Philosophy of the Week

The frills can make a factory or an office a more comfortable place in which to work, but the management that nets the biggest morale and best

(Concluded on Page 6, Column 4)

Room Cooler Sales Potential Could Be 125,000,000

BOSTON—The national potential for room air conditioners is estimated at about 125,000,000 units, Austin Rising, vice president and general sales manager of The O. A. Sutton Corp., told the recent air conditioning meeting of the Electric Institute of Boston. In taking a look at what the national potential is considered to be, Rising said:

"First, a sizable quantity of units will go into office buildings, commercial installations, hotels, motels, etc. This figure is estimated to be some 20,000,000 units.

"Next, there are over 42,000,000 families in America . . . Figuring on the basis of 2½ units per home, this would add another 105,000,000 units to the already large potential. The total of these is some 125,000,000 units."

A detailed report on Rising's talk on "How To Sell Air Conditioners" will be published in a future issue of the NEWS.

NAED Will Meet In Chicago May 24-29

NEW YORK CITY—The 45th annual convention of the National Association of Electrical Distributors will be held at the Conrad Hilton hotel in Chicago May 24-29, the group has announced.

Activities will include Appliance Div. meetings May 25 and 26, a general convention session May 27, and meetings of the Apparatus & Supply Div. May 28 and 29.

In addition, a manufacturers conference booth center will be maintained on the exhibit hall floor of the Conrad Hilton. Booths will be open from 1 to 5 p.m. May 24, from 9 a.m. to noon and from 3:30 p.m. to 6:30 p.m. May 25, from 4 p.m. to 6:30 p.m. May 26, and from 3:30 p.m. to 6:30 p.m. May 27 and 28.

Also, there will be a meeting of the board of governors May 24, a father-and-son dinner for members on May 26, and election meetings for NAED zones and a board of governors dinner and organization meeting May 27.

Among those scheduled to address the Appliance Div. convention are Cloud Wampler, president of Carrier Corp.; John C. Sharp, president of Hotpoint Co.; Richard J. Sargent, manager of major appliances, Westinghouse Electric Corp.; A. L. Scaife, manager of sales planning, Small Appliance Div., General Electric Co.; H. C. Bonfig, vice president and di-

(Concluded on Page 4, Column 1)

Typhoon Sees '53 Sales 50% Above Last Year

NEW YORK CITY—The Typhoon Air Conditioning Co. reports that sales for 1953 should, according to present indications, exceed last year's figures by approximately 50%.

Don V. Petrone, executive vice president of Typhoon, states production has been raised considerably in order to take care of the anticipated increase in demand. Volume for the first quarter was up 55% over last year, and April sales figures were the highest in the company's history.

Typhoon this year has gone into full scale production of residential year-round air conditioning, and Petrone reports that Typhoon expects to produce at least 3,000 of these units during 1953.

Typhoon heat pumps, produced in the Typhoon Prop-R-Temp affiliated factory in Tampa, Fla., showed a sales increase in the first quarter of approximately 80%.

Compressor Runs at 3,500 RPM In New Airtemp Conditioner

DAYTON—Chrysler Airtemp's new 3,500 r.p.m. four-cylinder sealed radial compressor furnishes the cooling in the new, compact 2-hp. air-cooled residential air conditioners which Airtemp Division of Chrysler Corp. is introducing to the field this week.

Five years of development and experimentation are reflected in the new 3,500 r.p.m. compressor, Airtemp officials declare. In the later stages of its development, the compressor was run through a test equivalent to 5,000 hours of continuous operation under peak load conditions. When the test unit was torn down afterwards there were no apparent signs of wear, company officials declare. A further test started and stopped a compressor more than three-quarters of a million times at 10-second intervals, again with no signs of wear, it was stated.

The four cylinder compressor is 18 in. high and 9½ in. in diameter, weighing 130 lbs. Bore is 1 in. with a 1$^{5}/_{16}$ in. stroke. Older models producing the same amount of refrigeration, say Airtemp officials, stood 22 in. high with a 16 in. diameter, had a 1⅞ in. bore and 1½ in. stroke, and weighed 305 lbs.

Steel-backed bronze main bearings

(Concluded on Back Page, Column 1)

425 Exhibitors Register for SMI Show May 24-27

CLEVELAND — With a record show of 425 exhibitors, the 16th annual convention of the Super Market Institute will get under way in the Public Auditorium here at noon Sunday, May 24.

The event will continue through Wednesday, May 27.

Programmed around the theme of "How to Sell More—Profitably," business sessions of the group will take up numerous problems of supermarket management and operation.

Among the exhibitors who have taken space for the show are Freezer Box Div., Annapolis Yacht Yard; Evans Mfg. Co.; Federal Refrigerator Mfg. Co.; Freez-Rite Div. of Bailey & Perkins; Friedrich Refrigerators; Frigidaire Div.; C. V. Hill & Co.; Hussmann Refrigeration; McCray Refrigerator; Sherer-Gillett Co.; Tyler Fixture; Typhoon; and Weber Showcase.

Opening business session Monday

(Concluded on Back Page, Column 5)

Detroit Weighs Sunday Appliance Store Closing

DETROIT—After a stormy hearing which nearly got out of control several times, Common Council took under advisement a proposed city ordinance which would require appliance and furniture dealers to close on the Sabbath.

More than 100 retailers appeared at the hearing to argue for and against the measure.

Charles Boyd, secretary of the Retail Merchants Association, spoke in favor of the proposal. He said Sunday openings should not be permitted, mainly because there is no need for them.

Declaring that many church officials are very concerned about the matter, Boyd said: "Every conceivable type of retail business will want Sunday openings if we allow them to the furniture stores."

Seek Special Price For Industrial User Of Cooling Jobs

LOS ANGELES — The Refrigeration & Air Conditioning Contractors Association of Southern California, Inc. suggests that an industrial user price should be established for refrigeration and air conditioning equipment.

Many of the group's members feel, the association says in its current bulletin, that with price controls now lifted, wholesalers and jobbers, manufacturers' agents, and manufacturers should establish such a price "which would be in the neighborhood of between 20% and 25% increase in the price at which this equipment is sold to contractors."

This price would be for industrial and commercial accounts which maintain their own service and installation departments, according to the bulletin.

"The consumer price when subletting the labor would be, of course, higher than the industrial user price," the association says. "Thus, the proper price listing for refrigeration and air conditioning equipment would

(Concluded on Back Page, Column 5)

National Steel Making Room Air Conditioner

LOS ANGELES—A new room air conditioner in ½-hp. and ¾-hp. sizes is being manufactured and marketed by National Steel Construction Co., maker of automatic water heaters, with plants in Logansport, Seattle, and Los Angeles.

Five major features are embodied in the engineering and construction of the air conditioners which cool, circulate, filter, and dehumidify, according to the company.

"These features are comfort zone cooling created by the high velocity of air delivery and the near vertical pitch of the fixed position louvers which force the cool air upward only," the company said.

"Room occupants are not exposed to cool drafts or cold-breeding chills.

"National's velvet-soft operation is achieved by a reverse flow noise trap,

(Concluded on Page 4, Column 2)

Easy To Broaden Line With Automatic Washer

SYRACUSE, N. Y.—The Easy Washing Machine Corp. will produce an automatic washer by mid-summer, it was announced recently by W. Homer Reeve, president of the Syracuse home laundry manufacturing company.

Offering of an automatic washer to the public is part of Easy's program to expand its product line. Last fall, Easy marketed a clothes dryer as the first step in this program.

Easy will continue the manufacture of its Spindrier and wringer

(Concluded on Page 4, Column 3)

Knoxville May Require Permits For Big Cooling Installations

KNOXVILLE, Tenn. — City Law Director Clarence Blackburn says an ordinance is being prepared aimed at controlling installation of air conditioning and refrigeration equipment which uses large quantities of water and in some cases overloads sanitary sewers.

"The ordinance would require a city permit before such equipment could be installed," Blackburn stated. "The city proposes a $5 fee for the issuance of the permit to cover costs of inspection."

See Frozen Food As Profit Source For Restaurants

Freezers Suggested To Push Pre-Meal Preparations, 'Take Home' Cooked Foods

CHICAGO—In the restaurant business, the trend is toward freezing cooked foods. They help the restaurant operator to prepare in advance for rush periods and to develop new "take home" food business.

So declared speakers at the 34th annual convention and exposition of the National Restaurant Association held here from May 11 to 14.

Andrew S. Seiler, head of Seiler Operations, Boston caterers, declared that restaurateurs could start out a cooked foods freezing operation with two chest-type freezers and a display freezer. Total outlay would run about $2,000, he said.

(Editor's Note: Pictures of new refrigeration products exhibited at the exposition will appear in subsequent issues of the NEWS).

Through freezing, Seiler declared, the restaurant operator can buy his foods in larger quantities and can prepare sufficient foods ahead of time to take care of his rush periods. He can prepare these foods days rather than hours in advance, thus cutting down on overtime work during busy periods.

And, to develop a growing trend toward selling restaurant dishes for customers to take home, freezing helps the restaurant operator to prepare in quantity the items in greatest demand to meet his customers' requirements.

J. Fred Vollmer, retiring president of the association, asserted that many restaurants are experimenting with the sale of their products through chain stores as well as through restaurant outlets.

"The restaurateur with a reputation for fine food has one big advantage when it comes to selling meals for home consumption. He is already well and favorably known for the quality of his cooking as well as his food. . . .

"The take-home business could assume the form of one or more items to be sold, depending on the size of the restaurant. Certainly a small restaurant that is famous for one item could bring many additional

(Concluded on Page 21, Column 3)

RCA Refrigerators, Freezers In Canada, But Not In U.S.

CAMDEN, N. J.—The fact that RCA Victor Distributing Corp.'s Canadian distributor has announced that it is introducing RCA brand-name refrigerators and home freezers throughout Canada does not mean that distribution of these products is contemplated in the U. S., it is stated by RCA officials.

RCA Victor, Ltd., Montreal, the Canadian distributor, launched advertisements recently, headlined "They're Here—RCA Victor now brings you RCA Home Appliances." The ads featured a refrigerator and both a chest and upright model home freezer.

It is said that the refrigerators and freezers are made by Franklin Transformer Co., Minneapolis, which has manufactured such products for brand-name distribution for the past several years.

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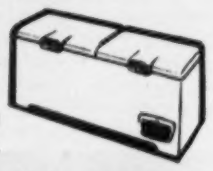
23 CU. FT.
CHILL CHEST
FOOD FREEZER

● *Bigger profits are yours, when you sell this outstanding 1953 Revco line a size popularly priced to make sales faster, easier.*

Faster Freezing

ALUMINUM FOOD WALL CONSTRUCTION
NEW REFRIGERATION SYSTEM



Write For Distributor's Name

REVCO, INC. · DEERFIELD, MICH.

C. R. Brogan Elected Vice President of Refrigeration Discount

DETROIT—C. R. Brogan has been elected a vice president of Refrigeration Discount Corp. (Redisco), a subsidiary of Nash-Kelvinator.

C. R. Brogan

Brogan, who has been general manager of the appliance financing subsidiary since 1947 and a director since 1951, has spent more than 27 years with Kelvinator in executive positions in financing and distribution.

He joined Kelvinator in 1926 in the service department, transferring to sales in 1929 as district manager in Virginia. He subsequently was commercial sales representative in Washington, and from 1934 to 1939, held several executive sales positions in the Southeast.

Shortly before opening the company's new Atlanta zone office in 1939, where he served as zone manager for eight years, Brogan was with Kelvinator's marketing division.

Redisco, with 21 branches throughout the country, provides instalment financing service for 4,200 Kelvinator and Leonard household appliance outlets.

V. A. Knudsen, assistant comptroller, has been promoted to comptroller of Redisco of Canada, Ltd.

New Credit Bill Would Authorize 90-Day 'Freeze'

WASHINGTON, D. C.—In a move apparently aimed at minimizing controversy in the Senate over instalment credit controls, the Senate Banking and Currency Committee recently reversed its previous decision to recommend that the Federal Reserve Board be given a two-year stand-by authority to control down-payments and pay-off periods on major appliances and other consumer durable goods.

The committee reportedly agreed to offer on the Senate floor a substitute amendment to S. 1081 which would authorize the President to "freeze" consumer credit terms for a maximum of 90 days in the event of a new emergency, provided that he also froze prices and wages.

The new amendment would also allow merchants to continue selling merchandise on the same terms in effect on the day prior to a presidential "freeze" order until such time as Congress acted to empower the Federal Reserve Board to restrict such terms.

The committee proposed that the amendment be substituted for the credit controls sections of the bill to extend the Defense Production Act.

To Sell, Service York Units

ST. PETERSBURG, Fla.—Southern Equipment Corp. will now handle sales and service on York air conditioners and ice-makers here, according to L. E. Stimson, local manager, who announced its opening.

RCA Has Service Clinic On Air Conditioners

CAMDEN, N. J.—Installation and maintenance methods of room air conditioners will be covered in a series of service clinics for RCA Victor dealers, it was announced by company officials. The first was held May 4 in Philadelphia.

A team of technical experts headed by H. W. Timmerman from the RCA Service Co., in cooperation with the company's distributors, will conduct the meetings, according to W. F. Carolan, general sales manager of the RCA room air conditioner department.

Slide films will be used extensively, and all attending will receive a comprehensive manual covering all phases of room air conditioner installation and maintenance.

Although the meetings are planned primarily for technical service personnel, many dealer salesmen are expected to attend, said Carolan.

Servel Names Jennings Engineering Chief For Air Conditioning

EVANSVILLE, Ind.—John H. Jennings has been named chief engineer in charge of all air conditioning activities at Servel, Inc., it was announced recently by Theodore W. Rundell, vice president in charge of engineering.

Jennings joined Servel a year ago as chief engineer for room air conditioners. He is now responsible for engineering on Servel "All-Year" air conditioning as well. Previously he was chief engineer of Mitchell Mfg. Co. of Chicago.

Dr. Eugene P. Whitlow, formerly development engineer on All-Year air conditioning, was appointed assistant chief engineer for All-Year air conditioning.

Ed Geishert, who was development engineer for room air conditioners, is now assistant chief engineer for that product.

Midwest REWA To Meet In Port Huron June 25-26

PORT HURON, Mich.—A meeting of Midwest members of Refrigeration Equipment Wholesalers Association will be held June 25 and 26 with headqarters at the Gratiot Inn on Lake Huron near here.

Meetings will be held at the Black River Country Club of Port Huron, and a number of social events are also scheduled. Conducted tours through the Mueller Brass Co. plant will be available for those who wish to make such tours.

Dealers' Air Conditioned Home Draws 4,000 In Day

TUSCALOOSA, Ala.—The first of several year-round Carrier air conditioned home shows to be sponsored by local dealers of Shook & Fletcher Supply Co., Birmingham, in cooperation with builders, attracted 4,000 visitors in seven hours.

Two completely furnished, "Weathermaker" equipped homes in "Brookhaven," a new residential section, were open to the public from 12 noon to 7 p.m. on a Sunday.

Each lady was presented with a free growing azalea, and all visitors were asked to register for the grand prize, a clock radio. The registration cards will be used as a prospect list for sale of the homes; and for air conditioning installations by the Miller Electric & Refrigeration Co., Carrier dealer in Tuscaloosa.

Foster Miller, owner of Miller Electric & Refrigeration Co. and Jack Gates, Shook & Fletcher salesman, handled all details of the home show with the builder and real estate firm serving as co-sponsors.

Miller furnished the air conditioning equipment and also complete kitchen equipment and all electric appliances.

Promotion of this event consisted of numerous announcements on two radio stations and a recorded "on the spot" interview, newspaper "teasers" and a large advertisement the day of the showing. The paper also supported the event editorially.

Similar methods of promotion will be utilized for other home shows in the series, the next of which is to be held in Decatur, Ala., early in May.

Alsco Opens Office, Plant In Miami To Serve Florida

MIAMI, Fla. — Alsco, Inc., of Akron, Ohio, manufacturer of air conditioning equipment, has established a sales office and fabricating plant at 3711 NW Second Ave., Miami.

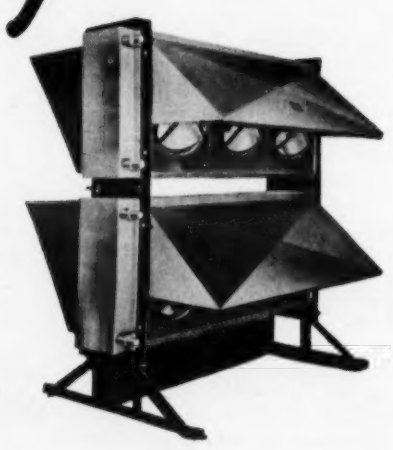
The local operation will serve all Florida through a separate company called Alsco, Inc. of Florida. President of the company is Albert Fenkell, a resident of Greater Miami for the past 10 years.

4 New Representatives Appointed by Farr

LOS ANGELES—Four new representatives are announced by Farr Co. of Los Angeles, manufacturer of "Far-Air" filters and air filtration equipment. They are St. Louis Air Filter Sales & Service Co., Air Filter Sales & Service-Denver, Air Filter Sales & Service-Minnesota, and Dust Control, Inc., Hawthorne and San Diego, Calif.

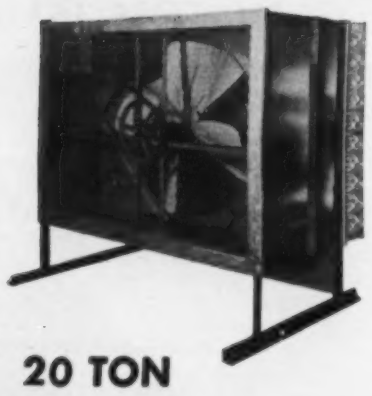
using water!

Eliminate all water problems with UNICON by KRAMER. Any size compressor, regardless of tonnage, can be air-cooled with UNICON.



15 TON

UNICON* by KRAMER



20 TON

Stands, hoods, and wind deflectors are available for simplified outside mounting
You need nothing else!

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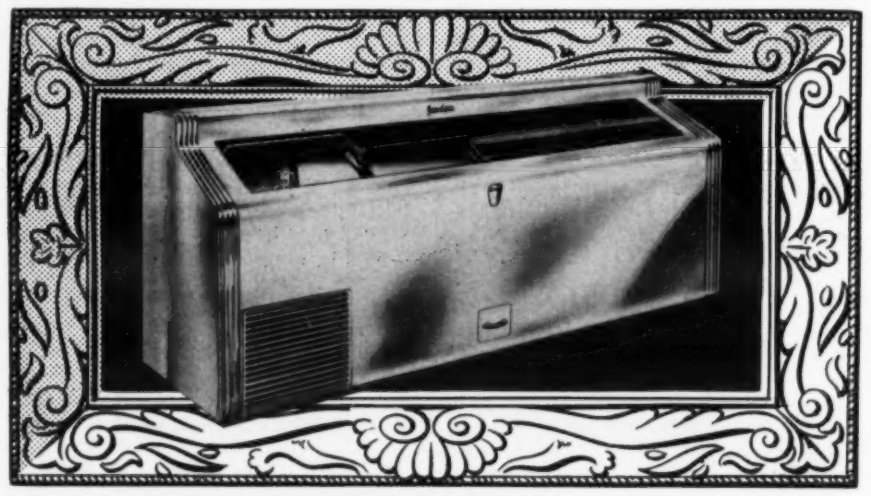

Are YOU in this JORDON Profit Picture?

NEW! Dry Beverage Cooler and All-Purpose Refrigerator with "Roll-Back", Disappearing Doors. Model 40—8'1" or 6'3" long.

Here's *another* good reason why *you* should be in the Jordon profit picture, with the biggest and best line in Jordon history!

Write, Wire or Phone *Today* for Free Catalogue and Price List!

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Display Cases · Wall Cases · Reach-in Refrigerators · Beverage Coolers · Freezers · Air Conditioners · Dehumidifiers

IF IT'S JORDON, IT'S RELIABLE REFRIGERATION

ASHVE Will Hold Its Semiannual Meeting In Denver June 29-July 1

NEW YORK CITY—The American Society of Heating & Ventilating Engineers will hold its 1953 semi-annual meeting in Denver, June 29, 30-July 1, at the Shirley-Savoy hotel.

Fourteen papers will be presented at four technical sessions devoted to determination of heat and moisture transfer through building materials, cooling tower performance, heat pump design and performance, effect of relative humidity on heat losses of individuals in various temperatures, and heat exchanges in floor panel heated rooms and heat flow analysis in panel heating and cooling sections.

The Society's Rocky Mountain Chapter will act as hosts for the meeting and the committee on arrangements will be under the direction of Fred Janssen. E. A. Thompson is vice chairman of the committee on arrangements and B. H. Spurlock, Jr., honorary chairman.

In addition to the technical sessions, other special features will include a golf tournament and banquet.

Advance reservation requests indicate a record attendance.

Registration will commence on Sunday, June 28, at 10 a.m. and will be from 9 a.m. each day.

The ASHVE Council will meet on Saturday, June 27, and the Chapters Conference Committee meeting will be held on Sunday, June 28. The Committee on Research has meetings scheduled for both June 27 and 28.

A welcome luncheon will take place at noon on Monday, June 29. The banquet will be held at 7 p.m. on Wednesday, July 1.

OK Hospital Conditioning In Cullman, Ala.

CULLMAN, Ala. — Announcement is made that Cullman hospital is to be air conditioned at a cost of $40,000. The City Council has voted to pay its pro rata share of the cost, the Federal government will match the city-county funds.

Bally's Office Building Completely Remodeled

BALLY, Pa.—Building contractors recently put the finishing touches to a completely remodeled office and shipping department at the main plant of Bally Case & Cooler Co. here.

Remodeling of the building was another step in Bally's long range program of expansion. This particular structure was one of the company's original buildings erected in 1934. The new design conforms fully with the modern design of the newer buildings erected recently.

The "face-lifting" provides increased space in the shipping department, a large mezzanine storage area, and a new loading platform. A completely new facade has been added to the front and side, finished entirely with Bally acid-resistant architectural porcelain.

The architect who designed this new face provided for a large pylon at the front of the building. The name of the company and its products are prominently displayed on this pylon. At night, special lighting makes them visible for many miles.

Several buildings adjacent to the one remodeled have been razed. The area covered by these buildings, together with an additional acre of land acquired later, have been converted into a modern parking space for office personnel and visitors.

Addition of this new land brings the total area occupied by the company to six acres. The next step in the company's expansion program calls for construction of a large new warehouse. Ground for the structure has already been broken.

Hilton Hotel In Albuquerque To Be Fully Air Conditioned

ALBUQUERQUE, N. M. — Plans for complete air conditioning of the Hilton hotel here were announced recently by M. J. O'Dell, manager.

O'Dell said the project will cost approximately $175,000 and will be completed in about four months. Through use of individual room controls, heat or cool air will be provided as needed. Only public spaces in the hotel are air conditioned now.

Germany and Japan To Get Trion, Inc. Plants

McKEES ROCKS, Pa.—Plans for setting up Trion, Inc. plants in Dortmund, Germany, and Tokyo, Japan, were revealed by Edgar Meyers, Jr., president, and Paul Aitkenhead, board chairman, upon their return from a 10-week, globe-circling trip by plane.

They said the company expects to have a manufacturing plant and research center established in Dortmund by October and a factory in Tokyo soon afterward. Trion manufactures electrostatic air cleaners and air filters.

The foreign plants will be set up under what is described as a "novel arrangement." Nationalists of each country will furnish 60% of the capital and the remaining 40% will be Trion stock. This will mean mutual advantages for both American and foreign companies, with Trion not being called on to furnish cash, the officials pointed out.

Meyers said there are big markets for the company's electric air cleaners in Japan, Germany, India, Turkey, and Switzerland.

The firm has already made 400 installations in Japan. The majority of these are for hospitals and drug manufacturers.

Meyers also reported that India has placed a large order for air cleaners to be used in automatic telephone centers.

For five of its six years in business, Trion's sales have doubled over the preceding year. This year, Trion expects sales to again double, reaching a total of $2,800,000.

One-Third Ton Per Person

Houston Claims To Have Highest Per Capita Rate of Installed Air Cooling Capacity

HOUSTON — Last year 30,250½ tons of air conditioning capacity was installed in Houston stores, offices, factories and homes, the Chamber of Commerce reported. This brings the total capacity in Houston to 196,643 tons, which is said to be more than any other city except New York.

The per capita proportion of air conditioning for Houston is the highest in the nation, about one-third ton per person.

The New York total was 380,200 tons, or approximately 570,300 hp., the Houston Chamber of Commerce was told, for all five boroughs.

Totals for other cities, according to reports gathered by Houston officials, are: Chicago, approximately 166,667 tons—about 30,000 tons less than Houston; Washington, D. C., about 140,609 tons, including 754 installations last year totaling 9,301½ tons; Philadelphia, about 124,976 tons or 187,464 hp., including 13,650 tons (20,475 hp.) last year; Dallas, 86,152 tons: including about 23,543 tons last year; and Cleveland, with 44,000 tons of commercial and industrial air conditioning, of which 4,000 tons was installed last year.

Other partial but useful totals for air conditioning sales organizations are these: Atlanta has a grand total of 35,000 tons of air conditioning, including about 2,500 residential; Los Angeles, residential total of only 53,334 tons since the beginning of the air conditioning era; Detroit installed 512 installations in 1952, in excess of total of 10,000 tons, but no total over-all figure for the city given; and New Orleans, residential total by the end of 1952 was about 22,000 tons.

Here are other Houston figures that indicate the sales job done in that city, and still to be done:

Of 29 banks, 27 are 100% air conditioned and the other two partially.

Of 33 department stores, 31 are thoroughly air conditioned.

The nine large hotels are 100% air conditioned, and all the smaller ones have some air conditioning.

Twenty-eight large office buildings and many hundred smaller ones are air conditioned.

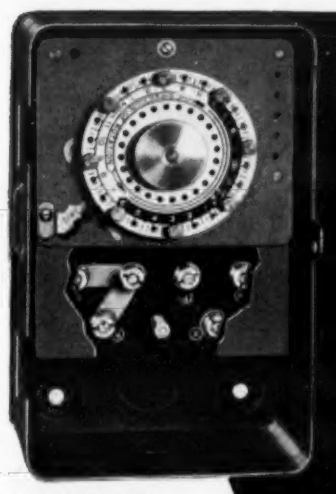
Twenty-three major theaters have partial air conditioning.

Over 30,000 homes are partially air conditioned and several thousand 100% air conditioned.

Freezer-Food Plan Firm Names Larvinson, Odom

DALLAS — W. L. Larvinson has been named manager of the Wicker Home Food & Appliance Co., D. E. Wicker, Jr., owner, announced.

The company operates a freezer-food plan here and expects to extend operations into the Fort Worth territory later this month, Larvinson said Larvinson's chief assistant will be W. G. Odom, named sales manager.



300-MB Series Time Switches for compressor shut-down, electric heater defrosting, hot gas or reverse cycle applications.

for accurate dependable defrosting time switches

specify paragon

Dependable, accurate defrosting is vital to good performance. That's why, for original equipment or for replacement, growing numbers of top-flight designers and service engineers demand Paragon defrosting time switches. That's why 96% of the commercial refrigeration manufacturers using automatic defrosting specify Paragon as standard equipment.

700 Series, 7-day calendar dial time switches provide individual program settings for each day in week.

TD-360 Beverage Cooler "de-frost-it" can be used with all makes and most models of dry type coolers — helps maintain lower temperatures.

"de-frost-it"

Attic & Window Fan Timers

Dehumidifier Timer

Time/Pressure Switches

Water Spray Controls

PARAGON ELECTRIC COMPANY
TWO RIVERS, WISCONSIN
World's largest exclusive manufacturer of time controls

SELL WESTINGHOUSE

With Brand-New Home Air Conditioners

Get your share of today's vast market for residential air conditioners. Get the new Westinghouse Unitaire® Conditioners. Ratings are three and five horsepower. A UNITAIRE is a compact package. It is under four square feet—smaller than a refrigerator. It works with forced air heating systems, in old or new homes. Today, Westinghouse is giving the UNITAIRE exceptionally strong advertising and promotion coverage.

You will benefit as a franchised Westinghouse Distributor. A few territories are still open. Contact Westinghouse Electric Corporation, Air Conditioning Division, Hyde Park 36, Massachusetts.

WESTINGHOUSE AIR CONDITIONING

YOU CAN BE SURE...IF IT'S Westinghouse

J-80306

NAED Meeting--

(Concluded from Page 1, Column 2)

rector of sales, Zenith Radio Corp.; and Dr. W. R. G. Baker, chairman of the National Television System Committee.

Bonfig and Baker will speak during the opening session Monday afternoon, May 25. The former will describe the latest merchandising techniques for increasing radio sales and Baker will discuss current developments regarding color television.

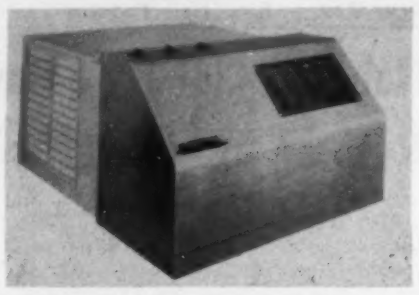
On Tuesday, Wampler will speak on "Air Conditioning and the Electrical Distributor," Sharp will discuss "Unfinished Business," Sargent will talk on the subject "Everybody's from Missouri," and Scaife will tell the division "How It Looks From Here."

Tuesday's program also lists a progress report from NEMA's electric housewares section on the gift compaign, and a talk by L. E. Barrett, chairman of the plan committee of the National Adequate Wiring Bureau on "So You Are Selling Too Many Appliances."

Programmed for Wednesday's general convention session are addresses by George F. Hessler and Charles Pyle, NAED president and executive director, a panel discussion on the outlook for the last six months of 1953, and a talk by Tom Collins, publicity director of City National Bank and Trust Co., Kansas City, Mo.

JUST ASK US

Turn to "What's New" Page for useful information on new products.



National Room Air Conditioner.

National Steel Cooler--

(Concluded from Page 1, Column 4)

foam rubber lining, and insulation throughout.

"Any proportion of inside and outside air circulation is assured by finger tip control of simplified air damper. Air intake is on the underside of the cabinet away from curtains and draperies. Outside air is drawn in through a fully accessible air scoop at back and bottom of unit thus overcoming the problem of air stacking.

"National dehumidifies the air for complete comfort and has an exclusive method of disposing of the water by means of vaporization coils which evaporate the moisture.

"Unit comes complete with instructions, installation kit, and 5-year warranty on the sealed refrigeration system."

The ½-hp. unit is for average rooms with floor areas up to 300 sq. ft., and the ¾-hp. model for average rooms with floor areas up to 425 sq. ft.

Precision thermostats are standard on the ½-hp. unit and optional on the ¾-hp. unit.

Easy Automatic--

(Concluded from Page 1, Column 4)

model washing machines to satisfy the strong demand for these models which has grown during the years, Reeve said.

The automatic washer will be a cabinet-type top loading machine with advance styling adaptable for modern kitchen and utility use. Easy's new washer will be completely automatic in operation.

Assembly and production lines at Easy's plants are now being retooled and rearranged so as to provide for the manufacture of the automatic, which will be built in conjunction with Easy's established line of home laundry products.

President Reeve, in commenting on the impending production of the new machine, said:

"Our new automatic incorporates forward thinking in basic design as well as many new ideas in functional features.

"Easy management considers this new automatic a means of broadening our product line so that our dealer organization may meet the varied consumer demands for home laundry equipment.

"In addition, it will expand our dealers' over-all sales volume potential and strengthen their bid to obtain a greater share of the consumer dollar. At the same time, we recognize the necessity of maintaining production and distribution of our regular Spindrier and wringer models in order to maintain a strong position in the home laundry industry and satisfy the wants of housewives who prefer these types."

NARDA Head Blames Low Profit on Dealer Laxity

MILWAUKEE—One of the reasons for the 3.2% of net profit showing made by dealers in appliances and television during this past year is the limited contribution dealers made to the selection and purchase of merchandise by the consumer, Wallace Johnston, president of the National Appliance & Radio-TV Dealers Association, told the Wisconsin state meeting of NARDA at the Astor hotel here.

"The manufacturer sets suggested list prices based on the price of competition's merchandise, the manufacturer's need for profit, and the need for good channels of distribution," Johnston said.

"In this final segment are included funds for the transfer of merchandise from distributor to consumer. This is divided so that some goes to the dealer and some is used for advertising and promotion, for bonuses and incentives, for trips and comparable business stimulants.

"Because the dealer's contribution to the sale dwindled in the easy war and postwar years and his turnover was automatically so high that he made a good dollar showing on moderate markups, his profit dropped from the former 40 to 50% of his costs to today's markups, in the low 30's or even the 20's."

Johnston attributed to this situation the poor profit showing of dealers even more than to price-cutting, trade-ins, or rising operating expenses.

He urged the dealers to increase their managerial capacity by studying the way in which their merchandise investments were spread, correcting errors in this, charting profit quotas as well as sales quotas, mapping out well-planned, aggressive sales programs, and backing them with attractive stores, competent and well-trained help, and dealer-created enthusiasm.

As an example of trade associations in action, he cited the campaign against Wisconsin Bill 130-A which called for an 180-day "implied warranty," with the penalty of the consumer returning the merchandise for a full refund. He pointed out that were the bill passed, set prices would increase in Wisconsin and out-of-state promoters would have a field day cutting prices below those of Wisconsin retailers.

Detroit Controls Clinic Travels to Wholesalers

DETROIT—Something new in the way of educational clinics for refrigeration and air conditioning servicemen has been set up by The Detroit Controls Co., in the form of a traveling operating display and service clinic which plays "one-day stands" in "Detroit" wholesalers' places of business throughout the country.

First of these clinics are being held in the eastern part of the United States, starting with the New York, Philadelphia, and Washington, D. C. metropolitan areas, but it is the company's plan to hold the clinics in cooperating parts and supplies wholesaler's establishments throughout the country, states F. G. Coggin, assistant general manager of sales.

The traveling display will be set up in the supplies wholesaler's establishment by Willis Stafford, a member of The Detroit Controls Co. factory staff, who will be assisted by the area sales representative for the company. These men will then man the display throughout the day, and will conduct the "clinic" whenever a group of the wholesaler's customers have gathered around the operating display, or indicated any interest in it.

For the first of the series of clinics Detroit will use its "pressure dropitis" display which it has featured at the REMA-RSES Educational Conferences. This discussion lends itself to a discussion of pressure drop, and the proper measures that can be taken. The clinics will be varied with discussions of other problems, it was stated.

The wholesaler will publicize the clinics to his customers, inviting them to drop in to "sit in" on the clinics any time that they find it possible to do so throughout the day.

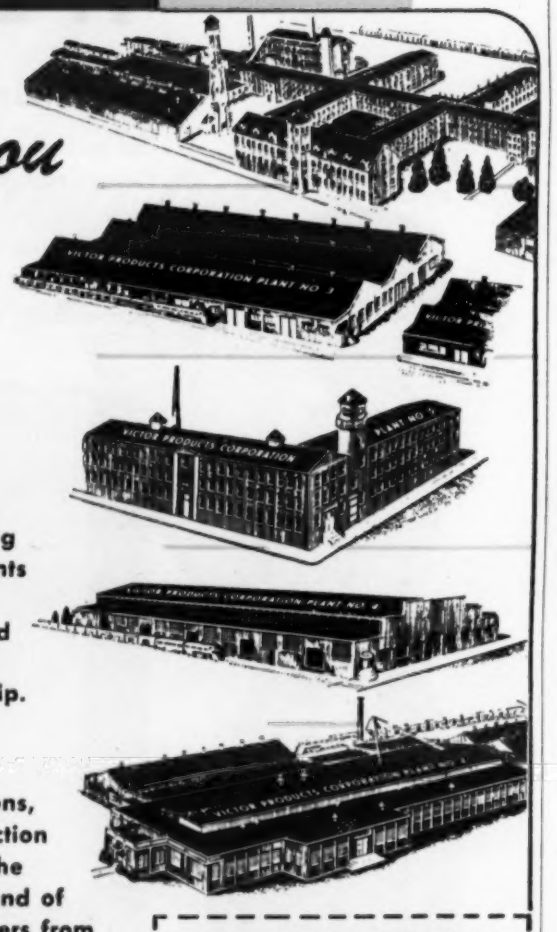
New Atlanta Temple To Be Completely Air Conditioned

ATLANTA — A new $2,000,000 Masonic Temple soon to rise in the heart of Atlanta will be air conditioned throughout by a summer-winter system, according to Thomas C. Law, president of Atlanta Masonic Temple Co.

The six-story and gallery building will replace the Peachtree St. temple which was destroyed by fire about two years ago.

Victor QUICKFREEZER

LEADERSHIP MEANS PROFITS FOR You



NOW *Victor* is telling America about the complete line, the dependable line of VICTOR products in the greatest national advertising campaign in its history.

ALWAYS *Victor* is keeping that leadership by looking ahead . . . in bringing out new models, new developments . . . improved products . . . the EXCLUSIVES that have made and will retain VICTOR unchallenged leadership.

FORGING AHEAD Toward new horizons, ever expanding production facilities to meet the pressing demand of increased orders from both old and new customers.

FOR THE FUTURE More Sales . . . More Profitable Sales in this . . . America's fastest growing industry. *Victor* is helping you to build a strong business for the years ahead. Send now for details on the complete VICTOR LINE.

FIRST NAME IN QUICKFREEZERS — Victor — UNSURPASSED QUALITY and Value in FREEZERS DEHUMIDIFIERS · AIR CONDITIONERS

VICTOR PRODUCTS CORPORATION • HAGERSTOWN, MARYLAND

VICTOR PRODUCTS CORPORATION
HAGERSTOWN, MARYLAND

Gentlemen: Please send complete details on the Victor products checked below.

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- ☐ Chest-Type Quickfreezers
- ☐ Air Conditioners
- ☐ Dehumidifiers
- ☐ Beverage Coolers
- ☐ Milk Coolers
- ☐ Self-Service Frozen Food Merchandisers
- ☐ Ice Makers
- ☐ Sterilizers
- ☐ Walk in High Temperature, Low Temperature Rooms
- ☐ Reach-in Refrigerators
- ☐ Triple-Deck Merchandisers
- ☐ Self-Service Cases
- ☐ Service Cases

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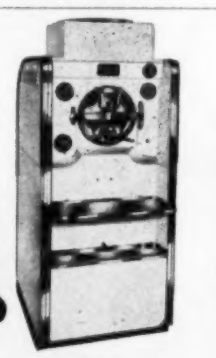
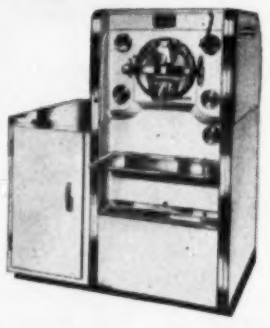
Address _____
City _____
State _____

How to make big money!



Mills Hopper Model (pumpless) makes both continuous soft frozen products and regular batch ice cream. Refrigerated Hopper holds 4 gallons of mix. Capacity up to 30 gallons of product per hour.

Mills Masterpiece Twin-Head Freezer for producing wonderful continuous flavored custards. Each barrel operates independently for perfect flavored product production. Capacity 7 to 10 gallons of product per hour. Available in floor and counter models.



Mills All-Purpose Pump Model with refrigerated Mix Cabinet. Cabinet holds two 10 gallon mix containers. Mix fed automatically to freezer barrel. Makes all continuous custards and batch ice creams. Capacity up to 30 gallons of product per hour.

● Mills Freezers are specifically tailored to fit your selling needs. Three models cover the entire field! The Mills Line is easy to stock, easy on the pocketbook, easy to install and EASY TO SELL. Your discounts assure you the biggest, sweetest profits you've ever seen, — yet Mills selling prices give you a tremendous competitive advantage over every freezer on the market!

And Mills Freezers provide your customers with the means to make big profits, and pay for their equipment quickly. No other freezer offers such clean, modern beauty, simplicity of operation, durability, and such amazing high quality at so low a price.

Mills is the only Freezer in the U.S.A. with 20 years of uninterrupted successful manufacture and sales to recommend it! Now with a booming soft products multi-flavored trend to back you, and the biggest Mills promotion in years including Saturday Evening Post and a long list of trade publications advertising, you can MAKE BIG MONEY! Write Mills Freezer Division NOW! Get the full details of choice territories.

be a MILLS distributor!

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4102 FULLERTON AVENUE • CHICAGO 39, ILLINOIS

'Freon-13'

Characteristics and Possible Applications of New Refrigerant That Is Being Introduced to Field on Gradual Basis

Commercial Refrigeration

LANSING, Mich. — Although "Freon-13" won't be commercially available for several years, some hints as to what servicemen may expect with this low temperature refrigerant were outlined for the Michigan RSES Association at its recent annual convention by R. L. Williams, refrigerant sales manager of du Pont's Kinetic Chemicals Division.

"The field for "Freon-13' is somewhat limited, but there is a definite need for it," Williams declared.

"You know that 'Freon-12' is a rather high boiling material in comparison with some other refrigerants. It boils at about -22° F. at atmospheric pressure. This was not low enough for some of our modern lower temperature applications, so in 1936 Kinetic introduced 'Freon-22,' which boils about 20° lower than 'Freon-12.'

"About 1940," Williams said, "We saw the need for even lower temperature refrigerants. The two developed were 'Freon-13' and 'Freon-14.' 'Freon-13' boils at a temperature of -115° at atmospheric pressure; 'Freon-14' boils at -198° F."

TAKES TIME TO TEST IT

While "Freon-13" came out in 1946, Williams emphasized that "it's not a commercial product with us as yet. A new refrigerant should be first evaluated and tested by manufacturers of equipment, and there are at least six manufacturers testing it now in machinery built to use it properly. It may take 10 to 15 years before it comes in general use, if the past acceptance of new refrigerants is any criterion.

"Chemically, 'Freon-13' is very similar to 'Freon-12' and is made from about the same materials, carbon tetrachloride being a principal one. 'Freon-13' has one less chlorine molecule and one additional fluorine molecule. The chemical symbol is $CCIF_3$.

"We don't feel 'Freon-13' is going to be the ultimate 15 years from now for the extremely low temperatures that will be required. But by that time, it will probably be as common a refrigerant as 'Freon-22' is today," Williams predicted.

IT IS NON-TOXIC

"We wouldn't introduce a refrigerant that wasn't safe, so 'Freon-13' is a non-toxic refrigerant in the same category, we believe, as 'Freon-12'. Our preliminary tests indicate that it would fall in the Underwriters' Laboratories classification as a Group 6 refrigerant, those having the greatest safety," he said.

He pointed out, however, that "no two refrigerants have exactly the same properties. They may be in the same family but each one is different. 'Freon-13' is non-flammable and non-explosive, and is more stable than 'Freon-12' in the presence of moisture, metals, and oils. It can be used with practically any kind of metal in a refrigeration system except magnesium, and as yet this metal hasn't been employed, extensively at least, in refrigeration.

"As for gaskets and seals, chemically the same materials can be used as with 'Freon-12' at normal temperatures. However," Williams cautioned, "some synthetic rubbers subjected to the extremely low temperatures of 'Freon-13' systems can become quite brittle so they have to be carefully selected."

There are some problems encountered with "Freon-13," largely because it is a low temperature refrigerant used in the range of -75° to 125° F., the speaker admitted.

"As you go down the temperature range, pressures of the refrigerant at normal temperatures must increase. There's no way around this. At a temperature of 86° F., for example, the pressure of 'Freon-13' is approximately 500 lbs."

PROBLEM WITH RELIEF DEVICES

"'Freon-13' can't be used in systems with the usual pressure relief devices—they wouldn't hold at normal temperatures—and it can't be used in compressors that don't have adequate bearing surface, heft of parts, etc. The condensing unit for 'Freon-13' may require somewhat heavier modifications of design, particularly receivers, although eventually these will probably be brought down in size and weight with newer alloys or metals.

"It can be used with capillary tube systems," he also said.

"Freon-13" doesn't mix with any mineral oils now available and in this respect is somewhat like "Freon-22," according to Williams. The oil has to be returned to the crankcase by means other than the refrigerant.

'DOESN'T LIKE WATER'

"'Freon-13' doesn't like water, so you have to be extremely careful in drying the system, and it is good insurance to install a drier using silica gel, calcium sulphate, or activated alumina.

"Some 'Freon-13' systems, despite these problems, are operating very nicely today, and the power costs are okay. As indicated, the systems have to be extremely tight, but they can be leak tested with the usual halide torch or an electronic leak detector.

"Present cost of this refrigerant may be considered rather high," Williams commented. "If we go into commercial production and with adequate demand, the price will naturally come down, but it will never be as cheap as 'Freon-12' or 'Freon-22'."

Although the field for such a refrigerant is limited, Williams sees use for it in certain industrial applications where low temperatures are essential.

"Many products, such as neoprene, wouldn't be possible without low temperature. There should be a big future for 'Freon-13' in the petroleum and chemical industries, and there will be increasing use of low temperature in other industries."

Possible applications in food freezing to speed production were cited.

"If, say, at a temperature of -70° F. it takes two hours to freeze a certain quantity of orange juice, by dropping the temperature to -150°, the volume of the same plant might be doubled."

Questioned about shaft seals on single stage units, Williams indicated these had to be about the same as those machines using CO_2.

"These shaft seals require very careful machine work," he added.

In answer to another question, Williams said that "Freon-13" may be used to replace ethane in existing low temperature systems, provided the physical, thermodynamic, and other significant factors involved are evaluated properly.

"It's being done by oil companies, for example. The big problem here is that the system is probably almost worn out before 'Freon-13' is put in so leaks develop."

IMPROVES EVAPORATOR EFFICIENCY
PREVENTS DAMAGE TO COMPRESSOR VALVES
REDUCES DANGER OF PLUGGED CAPILLARIES
REDUCES DEPENDENCY ON OIL SEPARATORS

NOW... MORE THAN EVER... THE FINEST REFRIGERATION OIL ...at any price!

ANSUL NON-FOAMING REFRIGERATION OIL

NOW . . MORE THAN EVER . . . ANSUL is the FINEST REFRIGERATION OIL *at any price!* In addition to the features which have made it outstanding in the past . . . *High Lubricity, High Stability, Low Moisture and Low Wax . . . a vital improvement has been made.* ANSUL OIL IS NOW PROCESSED TO PROVIDE NON-FOAMING CHARACTERISTICS . . . a distinct advancement in the science of refrigeration lubrication.

ANSUL is the LARGEST SELLING REFRIGERATION OIL sold through Refrigeration Wholesalers . . . *EXCLUSIVELY.*

ANSUL REFRIGERATION OILS HAVE BEEN MACHINE TESTED FOR 4500 CONSECUTIVE HOURS UNDER ACTUAL OPERATING CONDITIONS. IN ADDITION FIELD EXPERIENCE WITH ANSUL NON-FOAMING OIL IN ORIGINAL EQUIPMENT HAS BEEN EXCELLENT.

Write for more complete information on ANSUL NON-FOAMING REFRIGERATION OIL. ANSUL Technical Bulletins are also available to Refrigeration Service Engineers through Ansul Wholesalers who welcome every opportunity to serve the men of the industry.

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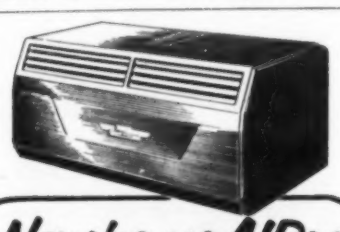
MANUFACTURERS OF REFRIGERANTS AND REFRIGERATION PRODUCTS, INDUSTRIAL CHEMICALS, SPECIAL CHEMICALS AND DRY CHEMICAL FIRE EXTINGUISHERS — DISTRIBUTORS OF DU PONT "FREON" REFRIGERANTS



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WINDOW TYPE
ROOM AIR CONDITIONER

✓ Thermostatic Control At No Extra Cost! ✓ 5 Year Warranty and Labor Allowance! ✓ 3 Sizes: ½ h.p., ¾ h.p., 1 h.p.! ✓ Smart, Compact Cabinet! ✓ Adjustable Louvers!

For details write Dept. AC 653

UNITED STATES AIR CONDITIONING CORPORATION
MINNEAPOLIS 14, MINNESOTA

It's Water That's Scarce

Plenty of Power Available for Residential Air Conditioning, But Rates May Stay Up

BETHLEHEM, Pa. — There'll be plenty of power for residential air conditioning, and gas supplies will improve, but water will be increasingly scarce, at least for the next several years, according to Walter Friend, consultant to utilities, who spoke at Lehigh university's technical conference on year-round residential air conditioning here.

"There is no indication, however, that electricity for air conditioning will be any cheaper in the next few years," he said. "The essence of the cost of electricity is the load factor, and unless it is tied in with winter heating, it is not too desirable.

"Utilities, though, are anxious to sell power, but there is the problem of establishing equitable rates."

POWER RATES SET BY PUBLIC COMMISSIONS

And power rates, he reminded the group, are not set by the utilities themselves but public commissions in most states.

"The primary way to reduce power costs, then, is to cut the size of the air conditioning equipment and reduce the power demand. For residential systems it is advantageous to keep the load within limits that can be served by single phase.

"Larger motors can be handled, too, if they don't come on and off the lines too frequently," Friend pointed out.

Commenting on the outlook for reducing power costs by the use of nuclear energy, Friend cautioned that "anywhere from three to 26 years have been forecast for the building of a nuclear power plant. You can expect nothing revolutionary overnight.

"You must also recognize that the cost of electricity leaving the generator plant is only one-third of its total cost. Distribution, overhead, and taxes account for the remaining cost of power."

EVEN ATOMIC POWER WILL BE COSTLY

Thus, he indicated, even if atomic power plants should prove successful, there will likely be no startling reduction in power costs.

"There is no electric power shortage anywhere in the country except in the Pacific northwest with its heavy industrial demands that are largely dependent on hydro-electric plants and are thus at the mercy of weather.

"The gas industry has long been afflicted with limitations on use of gas for winter heating, but these limitations are rapidly being eliminated," he declared.

4 DEVELOPMENTS HELP GAS SUPPLY

Four major developments explain the improved gas supply situation, according to Friend:

First, it has been proved that gas can be stored underground in summer, and this is now being done in 150 places;

Second, gas-operated turbines are now being used on gas transmission lines with a minimum consumption of water, which means that gas compressors can be located where needed instead of just where there is available cooling water;

Third, Canadian gas may be coming across the border. Political difficulties which have held this development back may be overcome in the next six months to a year.

Fourth, partial combustion of coal reserves will create new gas supplies.

LESS WATER FOR FUTURE USE

"On the water situation we can look forward to increasing scarcities," Friend said, but he indicated there is some hope for improvement here.

"Improved sanitation techniques may eventually permit returning sewage water back to the water mains while at the same time providing a source for fertilizer and gas. It may also be possible to convert sea water or poor well water into a higher grade water for air conditioning for other purposes by means of a system using permionic membranes," he predicted.

"This may be several years away, however."

GARBAGE DISPOSERS MAY HELP

There is one bright spot in the use of water for residential air conditioning, he indicated.

"Water engineers are becoming concerned over the increasing use of garbage disposal units. Air conditioning would provide more water to help carry away these solids."

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)

production extends that homey touch of friendliness and personal contact between the top management and the workers. — LAWRENCE STESSIN in *Forbes Magazine.*

Verse of the Week

"You ought to get married," said Mary (of course
Neglecting to say she's applied for divorce)
"Why haven't you married?" Lou asks in surprise,
(While bleak disillusion stares out from her eyes).
"You're missing so much, all alone," pities May.
(She thinks I don't know how they fuss every day).
My friends seem distressed 'cause I'm still fancy free,
(I'm tempted to think they'd trade places with me).

—*White Collar Girl.*

Oh, for a Child-Tending Appliance!

The average American housewife who longs for a maid won't believe it—but already she has a staff of 34 servants at her command. Furthermore, they require no extra bedrooms.

Nor is that all. She can shout Hallelujah. Come 1970 housewives should have the equivalent of 100 such servants! This startling news was hurled at the American Association of University Women recently.

J. Stanford Smith, manager of General Electric's apparatus advertising and sales promotion department, explains these ghostly domestics are "electrical servants and electrical power to run home appliances."

Mr. Smith adds that the average household has 2,200 kilowatt hours of energy available currently. He predicts that this Housewife Power will increase at least three-fold (to 6,500 kilowatt hours) by 1970.

One human servant can produce work equivalent to only sixty-seven kilowatts hours a year, he statisticked.

Try this "survey" on your hausfrau when she's in a Martyr Mood.

Then duck the flying chinaware.

Game of the Month

Did you ever play the game of "matchin" a fellow's name with the kind of business he is in? Examples:

Dr. Stephen Ovary — an obstetrician in New York.

George Coupe—an auto dealer in Glenside, Pa.

Dr. Rusell W. Brain—a London brain specialist.

Jim Wood—a general manager of a Philly lumber outfit.

E. P. Learned—professor at Harvard.

Fred Belcher—a Portland voice teacher.

Walter Roof—designer with Detroit Roof and Truss Co.

Readers are invited to "play the game" by submitting additional examples.

Worrisome Thought

Political heads of departments are necessary to tell the civil service what the public will not stand. — Harold J. Laski, *Fabian Tract,* No. 235.

SERVEL'S LIBERAL WARRANTY PLAN

Makes a Best Deal Better Still!

SERVEL SUPERMETIC
Five-Year Protection Plan Certificate
STANDARD ONE-YEAR WARRANTY. Servel warrants the condensing units sold by it to be free from defects in material or workmanship. Servel's obligation under this warranty shall be limited to repairing or replacing, free of cost to the owner, f.o.b. an authorized Servel parts supplier, any part of any such condensing unit, except motors (belt-driven models) and starting switches (the warranty on these items being administered direct by the manufacturer thereof), which Servel's examination shall disclose to its satisfaction to be thus defective, for a period of one (1) year from date of original installation.
FOUR-YEAR ADDITIONAL WARRANTY. In addition to the above standard one-year warranty, Servel agrees to replace, free of cost to the owner, f.o.b. an authorized Servel parts supplier, during the four (4) year period next following the expiration of said standard one-year warranty, the power unit only (excluding electrical accessories) contained in any Supermetic condensing unit of ⅙, ¼, ⅓, ½, ¾ and 1 HP steel case sizes sold by Servel, which Servel's examination shall disclose to its satisfaction to be defective in material or workmanship.
In case any such condensing unit should be located outside the United States, the only transportation charges for which Servel shall be responsible under this five-year protection plan shall be those for transportation between Servel's factory and the United States port of entry or exit, as the case may be.
"servel.shs" ... to ... any renewal or installation charge whatsoever under this five-year
MODEL SM49

BOTH BUYERS AND SELLERS OF SUPERMETIC CONDENSING UNITS—

in ever-greater numbers every year — are investing in the super-protection provided by Servel's Five-Year Warranty Plan. Liberal and low in cost . . . simplified and highly workable . . . it saves time and eliminates red tape when there's a need for a part replacement.

That's one reason why Servel users value the warranty "certificate" issued direct from the factory. More than printed words, it's genuine assurance of satisfactory performance for one of the most important periods in the life of the refrigeration unit.

More and more the experience of refrigeration men is proving Servel's interest in offering users the best and most liberal of factory-backed protection plans. Should a renewal part be required, the serviceman doesn't need to wait for factory exchange approval. Steel case power units are warranted five full years . . . cast case sizes for one year. Servel Wholesale Suppliers are authorized to check inoperative parts and handle all Supermetic warranty transactions "over-the-counter." Servel's immediate replacement policy pleases customers, protects goodwill that results in repeat sales for the refrigeration dealer.

Ask your nearby Servel Authorized Wholesaler for full details about Servel's factory-backed Warranty — and your copy of the new Supermetic catalog. Or write the factory today.

Servel

SERVEL, INC., ELECTRIC REFRIGERATION DIVISION
DEPT. A53, EVANSVILLE 20, INDIANA

THE NAME TO WATCH FOR GREAT ADVANCES IN REFRIGERATION AND AIR CONDITIONING

MORE EFFICIENT DOUBLE-TUBE COUNTER-FLOW DESIGN

"New unit" efficiency is always maintained with H & M water-cooled Condensers because they are *cleanable*—quickly, economically. Do as the industry does—demand nothing less, for the cost is no more. *Write for Catalog.*

WHOLESALERS IN PRINCIPAL CITIES

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"Stories of the Week" In Handy Form

In response to hundreds of requests from AIR CONDITIONING & REFRIGERATION NEWS subscribers, the conductor of its "Inside Dope" column has collected and grouped his best "Stories of the Week." They are now available in convenient book-form for your reading and working pleasure. The book is entitled: "You'll Love This One."

Everyone will enjoy reading this book, we hope, but for the salesman—and for anyone who may be called upon to "say a few words" at a meeting—it should have especial appeal.

Here's why: this book of good stories *you* can tell is printed on thin paper, bound in flexible leatherette, and *designed to fit neatly into your inside coat pocket.*

While waiting in an ante-room to see Mr. Bigdome, the sales representative can thumb through it and pick out four or five pertinent jokes which are guaranteed to put his prospect in a good mood.

The man about to make a speech —or one who figures he may be asked to rise and shine extemporaneously—can consult it surreptitiously while the toastmaster is doing his stuff. Although it's jam-packed with grand tales, it isn't bulky. Rather, it's unobtrusive. Looks more like a leather wallet than a book.

You can be the life of the party if you've memorized some of the anecdotes in this book. Everybody loves a good story well told—and all the jokes in this book have been tested on tough audiences, both large and intimate, by the author.

Within its 236 thin-paper pages more than 200 sure-fire laughs are presented. You can use it profitably, and so can your friends. It's handsomely turned out, and will make an appreciated gift anytime.

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5-18-53

Outlying Areas Too Inconvenient

Refrigeration Sales Corp., Distributor In Cleveland, Moves To Bigger Downtown Bldg.

CLEVELAND — Faced with the problem of finding additional space and being reluctant to move to outlying areas, Refrigeration Sales Corp. here has occupied a five-story building just half a block from the famous Cleveland Mall, location of the city's Cleveland Mall, location of a large number of the city's public buildings and parks.

The company, which is the northern Ohio distributor for Norge appliances, Carrier air conditioning, and Stromberg-Carlson television, also capitalized on the move into new quarters by staging an open house that recieved considerable publicity in local papers and radio stations.

Helping Warren W. Farr, president, celebrate the opening were Cloud Wampler, president, and John M. Bickel, vice president, Carrier Corp.; George P. F. Smith, president of Norge Division, Borg-Warner Corp., and Mayor Thomas E. Burke of Cleveland.

OUTLYING AREA WOULD HAVE PRESENTED MANY PROBLEMS

Desire to stay in the downtown area, Farr explains, was based on the fact that an outlying location would have presented a problem in employe transportation and would have made it inconvenient for dealers and product users to obtain parts and service as well as putting a strain on the home and store delivery department.

The new quarters are at 701 St. Clair Ave. N.E. At the opening more than 600 dealers and suppliers were shown through the completely renovated and remodeled building, which totals over 35,000 sq. ft.

'JEWEL BOX' DISPLAY WINDOW TOPPED WITH TWO-FT. SIGN

A modern facade of fused glass blocks and wood surrounding a unique "jewel box" display window, topped with two foot high block letters identifies the building.

Just inside the lobby, a counter fronts up the parts department for user and dealer purchases, with another counter at the extreme end, accessable from the shipping department for the distributor's servicemens' orders. Needed space for additional general office, engineering, service, and sales people was accomplished by building in a mezzanine over the original office space of the previous occupants of the building.

Incoming merchandise is received on a slanted dock inclined toward the freight elevator which deposits it on the upper floors where modern mechanized material handling equipment stacks each piece in bays with lot numbers and identification codes clearly marked.

All the warehousing space is painted white and modern flat lighting fixtures allows for floor to ceiling stacking.

Outgoing merchandise is released through the shipping department by a copy of the customers invoice from the order and inventory control department, to company manned trucks for home and store delivery in the Cleveland area, and to public carriers for outstate delivery. A section of the basement area is set aside from storage for bench repairs and dealer service training.

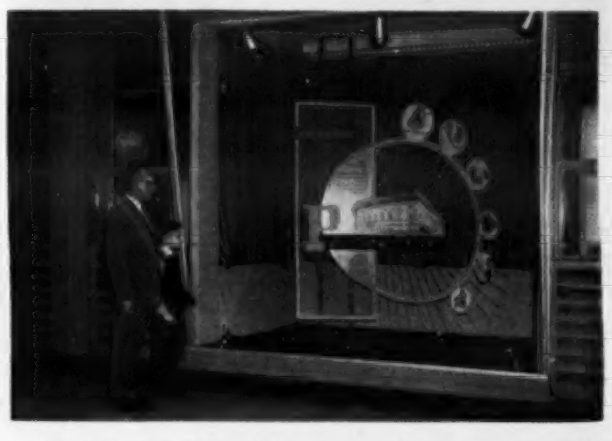
BLACK LIGHT FIXTURES

The "jewel box" window is equipped with black light fixtures, making for a very striking product presentation to street traffic. A complete display of all products and product displays is maintained for dealers and dealer customers in the first floor foyer.

This makes the fifth time Refrigeration Sales Corp. has had to enlarge its facilities since the company was founded in 1923 by Ernest W. Farr, father of the company's president.

Open House Staged with Support of Manufacturers, Mayor

RIBBON CUTTING ceremonies at Refrigeration Sales Corp. open house were aided by: (left to right) Cloud Wampler, president Carrier Corp., George P. F. Smith, president Norge Div., Borg-Warner Corp., Warren W. Farr, president Refrigeration Sales Corp., Thomas E. Burke, mayor city of Cleveland, and Carol Farr.



MODERN BLACK LIGHT windows are used for displaying merchandise painted with fluorescent paints visible to 60,000 Clevelanders each month. The display window is described as a "jewel box." The open house window pays tribute to adjoining Public Auditorium.

Frigidaire families live better because Frigidaire Appliances are better!

The experience gained over the last 32 years in building more than 16 million Frigidaire refrigerators is reflected in this superb line of appliances that sets a new standard in better living. Housewives the world over recognize the Frigidaire trade-mark as a symbol of quality, dependability and value. And it is an unmistakable mark of prestige for the dealer who can tell his customers that he recommends and sells Frigidaire.

The Cycla-matic Frigidaire Imperial—a food freezer-refrigerator combined. Wide range of Imperial, DeLuxe, Master and Standard models available.

Frigidaire "Leisure Laundry"—Automatic Washer with Live-Water Action, Filtra-matic Electric Dryer and Prestoe-matic Electric Ironer.

Frigidaire Electric Range line offers a total of 12 grand models.

Frigidaire Food Freezers—available in brilliant new styling, three sizes.

Frigidaire Dehumidifier stops moisture damage—fast!

Frigidaire Electric Water Heaters. Wide choice of models.

Frigidaire Air Conditioners with "Great Circle Cooling."

Frigidaire Appliances

Built and backed by General Motors

TYPHOON
OFFERS DEALERS MOST
Profitable Set-up
IN
AIR CONDITIONING

Air Conditioning Units—1½-20 tons
Multi-Packaged Systems—Up to 60 tons
Prop-R-Temp Heat Pumps—2-20 tons
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TYPHOON AIR CONDITIONING CO. INC.
794 Union Street, Brooklyn 15, N. Y.

To make a "GOOD CONNECTION" Call RIVERSIDE!

This rubber-encased connector links a refrigerator relay with a Fusite hermetic terminal, which is welded to the compressor. Originally, the connector had a brittle plastic case which presented various problems. Our engineers suggested a molded rubber case, also redesigned the contacts. Resulting improvements: (1) Greater structural strength, (2) Elimination of damage in handling, (3) Faster assembly, (4) Better electrical contact, (5) Higher "pull-out" rating. And if you have problems involving the design or production of similar or more intricate assemblies, you too, can "make a good connection!" Just write or call us, without obligation, for engineering recommendations.

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AND ELECTRICAL SUPPLY COMPANY
10233 Michigan Ave., Dearborn, Mich., Tiffany 6-6800
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Television, Radio, Heating,
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WHOLESALE ONLY The HARRY ALTER CO. Inc.

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HARRY ALTER gives you snappy service!

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For a growing INDUSTRIAL and COMMERCIAL AIR CONDITIONING and REFRIGERATION firm.

Six salesmen now employed. EXCELLENT OPPORTUNITY to qualify for GENERAL MANAGER position within six months. $10,000 plus to right man. Location Detroit. Box 4301, Air Conditioning & Refrigeration News.

Norge Washer Customers Get First Call on New Dryer

CHICAGO — "Preferred customer" certificates are being used by distributors in a preliminary campaign to merchandise the new Norge "Time-Line" automatic dryer.

David H. Kutner, director of advertising and public relations for Norge Div. of Borg-Warner Corp., said the certificates give priority on purchases of the dryer to owners of the companion Time-Line automatic washer.

He said the wide acceptance of the washer makes possible this type of promotion.

Distributors are sending the certificates with a personalized letter briefly covering the dryer's features, plus an illustrated flyer. The certificate is filled in with the name of the customer and the name of the dealer who sold the Time-Line automatic washer.

Deepfreeze Plans Summer Field Sales Conference

NORTH CHICAGO, Ill. — Deepfreeze home appliances announces that its Summer Field Sales Conference will be held at Nippersink Manor in Genoa City, Wis., June 14-18.

Field representatives and sales engineers will participate in the four-day meeting to plan their selling program for the last half of this year and the first half of 1954, it was announced by B. G. Sanderson, who is general sales manager of Deepfreeze.

Over 1,400 Retailers Win Frigidaire Service Award

DAYTON — Despite "unusually high standards and rigid requirements" of Frigidaire's new service "Award of Merit" program initiated recently, more than 1,400 Frigidaire dealerships across the country have already qualified for this award for outstanding customer service, according to E. E. Landis, the company's national service manager.

Landis pointed out that the Award of Merit program is presented to dealers on the basis of service performance. To qualify and earn the award, the service activity of Frigidaire dealer must conform to "eight exacting requirements which guarantee an outstanding performance record," he said.

The Frigidaire dealer is judged on: (1) The number of customer service complaints received; (2) the service attitude of his organization; (3) the effectiveness of his service training program; (4) accuracy of his service records; (5) his service shop and equipment; (6) his stock of Frigidaire parts and accessories; (7) his record of performing out-of-warranty service; and (8) his willingness to follow recommended service practices.

Each dealership winning the award is presented an attractive bronze wall plaque.

'Erie County Days' Staged To Lure Villagers to Plaza

BUFFALO — Appliance stores in the Thruway Plaza joined with other plaza merchants in staging an "Erie County Days" promotion aimed at pulling traffic from towns and villages throughout the Erie county area.

The six-day promotion was built around a county fair theme and featured exhibits in plaza stores and windows by numerous Erie county service, social, civic, and welfare organizations.

A toy balloon ascension contest was staged for boys and girls in cooperation with the Erie County Youth Recreation Program. Application blanks for the contest were secured from a special booth located in the center of the plaza.

Double-truck newspaper advertising and radio and television spots were used to promote the event.

General Products Co. Named Norge Distributor In Hawaii

CHICAGO—General Products Co., Honolulu, has been appointed to handle the complete Norge appliance line in the Hawaiian Islands, it was announced recently by H. L. "Red" Clary, vice-president in charge of sales for the Norge Div. of the Borg-Warner Corp.

A new enterprise, General Products began operations May 1, according to Robert W. C. Fong, president who formerly was an oil and rubber distributor in the Orient. His previous firm maintained offices in eight major Chinese cities. The business assets were confiscated by the Chinese Communists.

Fong was recently released from the armed forces after his second tour of duty.

Philco To Tackle 'Biggest' Mass Transportation Job

PHILADELPHIA — Philco Corp. faces the biggest mass transportation job ever undertaken by a private company as it plans for its midsummer convention in Atlantic City from June 7 to 10, it was reported by railroad and airline officials.

It involves the transport of 7,500 men from every state, Hawaii, and Alaska to the shore resort center and more than 7,000,000 miles of travel by plane and train, said Ray B. George, Philco vice president in charge of merchandising.

Travel plans call for direct arrival at Atlantic City's airport and train terminal for the radio, television, and appliance dealers who are to attend the meeting.

Thor Sales Jump 40% In 1st Quarter, Profits Gain

CHICAGO — First quarter sales of major household appliances produced by Thor Corp. of Chicago totals $9,651,391 for an increase of 40% over the $6,880,979 total for the first quarter of 1952, Thor Board Chairman, Raymond J. Hurley, announced recently.

Hurley said, "Profits for the period were $174,972, equivalent to 52 cents a share, compared with last years' first quarter profit of $145,000 or 43 cents a share—an increase of 20%."

Thor recently added upright home freezers, refrigerators, and electric wall ranges to its appliance line, which includes washers, ironers, dryers, and chest-type freezers.

Movie Trailers, TV Films Plug Hotpoint Appliances

CHICAGO—Hotpoint Co. is making available to dealers and distributors colored movie trailers and black and white television spot announcements featuring 13 playlets of the new 1953 Hotpoint kitchen and home laundry appliances.

Three refrigerators, models EB-87-6, EH-95-6, and EH-110-6; three electric ranges, models, RB-51, RC-20, and RD-10; one upright freezer, model EM-105-7; one chest-type freezer, model, EK-15; one washer, model LH-1; one dryer, model LK-4; a dishwasher, model MC-14; water heaters and a "Launduet" are the featured players in these new films.

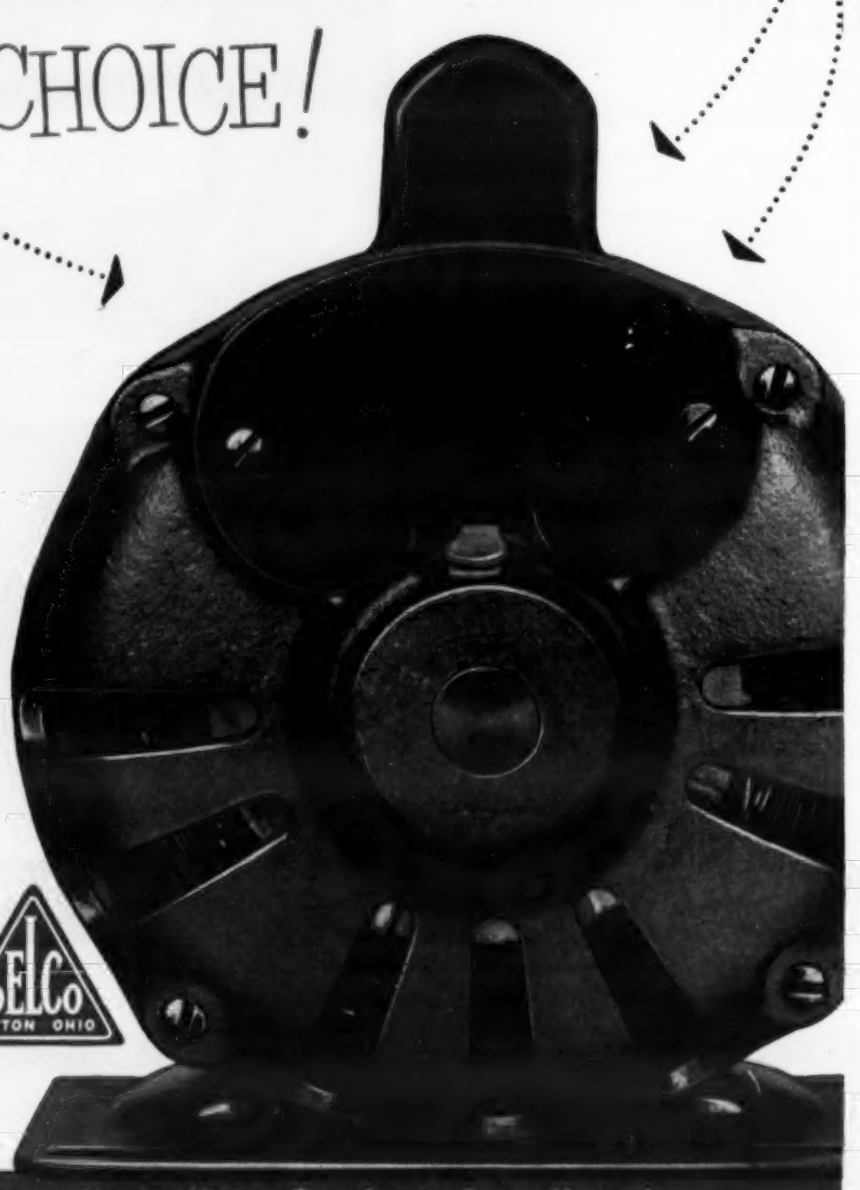
The movies are 35 mm.-26 second trailers and the TV films are 16 mm.-20 second spot announcements. Simulating a dealer's store with Hotpoint appliances, the films show a dealer demonstrating the appliance's features to two women prospects. Point by point explanation of the features are related to the viewers.

Cunningham Heads Sales For Keps Electric Div.

PITTSBURGH—Paul E. Cunningham has been appointed sales manager for the specialty division of the Keps Electric Co., which includes Odin gas ranges, Hollinator incinerators, and Mitchell room air conditioners, it was announced by J. Elias, president.

Cunningham, who recently joined Keps Electric, had been sales manager for 15 years with the Greenwich Gas Co., Greenwich, Conn.

ruggedness makes Delco Motors FIRST CHOICE!



What's different about Delco motors? Just this: Delco motors stay on the job . . . keep going on and on. Appearances, you see, can be deceiving. Motors often look and operate alike at the start, but Delco motors have stood—and will stand—the test of years in operation. That's why more and more manufacturers of air conditioning and refrigeration units are using Delco motors. That's why you'll be wise to get full information regarding these rugged, reliable motors at your first opportunity. Write Delco Products, Dayton, Ohio, or contact our nearest sales office.

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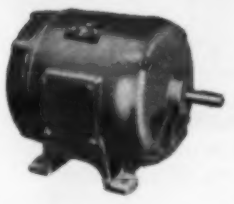
Division of General Motors Corporation
Dayton, Ohio

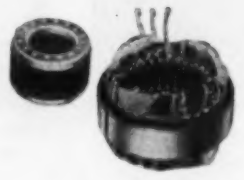
DELCO DAYTON OHIO

The Best Running Mate Your Product Can Have!

Delco Single-phase Fractional HP Motors. Repulsion-start, ½ through ¾ hp. Capacitor-start for blowers and open type compressors, ⅛ through ¾ hp.



Delco Integral HP Motors. Single-phase, repulsion-start, 1 through 5 hp. Polyphase, 1 through 100 hp.



Delco Hermetic Motors. Split-phase, capacitor-start, capacitor-start-and-run. Also polyphase. ⅛ through 15 hp.

Delco Condenser Cooling Fans. 1/250 through 1/80 hp.

NOW.. THE ICE-CUBER YOU CAN COUNT ON

FULLY AUTOMATIC

ICE-FLO!

(SINCE 1947)

FIVE ICE-FLO MODELS—

Sizes from ⅓ h.p. to 1½ h.p. The smallest makes 2520 deluxe size cubes daily. The largest delivers 10,800 per day. Pull out storage cabinets hold from 8 to 12 hrs. production.

THE ORIGINAL Solid-Cube Ice Maker for Hotels, Restaurants, Clubs, Bars, Cafeterias, Schools, Hospitals, Institutions, Drug and Chain Stores.

A DOOR-OPENER to better ice service, Ice-Flo automatically produces sparkling clear, solid, extra-large ice cubes in quantity at point of use. They neither mat nor stick together. Freezing compartment is self-cleaning. Cubes last longer in drinks and in storage because they are solid.

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Esmond Manufacturing Company

ESMOND RHODE ISLAND

Commercial Refrigeration

Small Markets Use Aggressive Selling of Frozen Foods To Fight Chain Competition

LINCOLN, Neb.—Aggressive merchandising of frozen foods is the answer to chain supermarket competition for independent grocers, in the opinion of two Lincoln grocers. Leonard J. Stransky, proprietor of Trixie's Super Market, and Dwayne L. Kushner, co-owner of three Kushner's Food Stores, both are planning extensive remodeling to more than double the space given to frozen food self-service vending cases.

Stransky, whose store is on the edge of the downtown business section and is patronized largely by apartment dwellers, reported that his frozen food sales have increased between 700 and 800% in the past five years. He attributed this to pushing the item through display and advertising, plus the natural growth of the industry. Now he is planning to remodel with an eye toward more than doubling the space devoted to frozen food self-service cases.

Trixie's currently has 24 ft. of frozen food cases in the form of two 12-ft. cases. The older of the two is enclosed and is used now largely for auxiliary selling. The other is self-service with a mirrored backbar. Glass covers are provided during the morning hours, but are removed for the latter period of the day when traffic is heavier.

This grocer also has a 3-ft. self-service case used mainly for frozen juices. It is mounted on casters and can be plugged in anywhere in the store when specials are being promoted. Most of the time, however, it is located near the checkout counters as a juice-reminder to customers as they finish their shopping.

CASES LOCATED AT REAR

The frozen food cases are located at the rear of the store in line with the service meat department and dairy produce cases. They adjoin the vegetable and fruit cases along the south wall at a right angle. Stransky has found that this continuity produces more sales of frozen foods. There are also a 20-ft. case for service meats, two 10-ft. cases for dairy produce and pre-packaged meats, and a 30-ft. vegetable case. Two 12-ft. cases are located at the checkout counters for vending cold beer. Each case forms a back display counter for each of the two checkouts.

Stransky buys his frozen foods through a local distributor and gets delivery every morning. This eliminates the need for extensive cold storage space in his store, he pointed out. Incidentally, the daily frozen food delivery now is slightly larger than an entire week's delivery five years ago.

Stransky concentrates on a single high-quality line. Lower-priced lines are carried only in two items — orange juice and peas, which are the biggest volume items in frozen foods at the Lincoln store. Price competition in other frozen food items doesn't pay, the grocer asserted. But when competitors feature price promotions in frozen foods, he successfully counters with his competitive lines of juice and peas.

FROZEN FOODS ADVERTISED ONCE A WEEK

Frozen foods are advertised once a week in the local newspapers. In addition, he uses window cards, point-of-sale posters and a large inside wall sign to push this merchandise. One of the frozen food cases is backed up against the walk-in cooler at the rear of the floor. The entire end of the cooler above the case has been converted into a billboard, featuring a large neon "Frozen Food" sign and colored posters which are changed seasonally and to announce new products. This sign can be easily seen from any spot in the store.

Smaller packages have been most in demand at Trixie's because of the fact so many of the customers live in apartments. The 10, 12, and 16-ounce sizes all have moved well, but it has been found unprofitable to even stock the larger sizes.

Stransky, in addition to planing extensive expansion of frozen food space, also is starting to work out a tie-in with an appliance dealer for the sale of home food freezers. With this plan in operation, he will offer a discount on frozen foods to freezer owners as a means of combating locker and the big frozen-food plan competition. Containers and wrappings for home freezers also will be added.

DWAYNE L. KUSHNER, right, discusses refrigerated display expansion for Kushner's No. 3 store with one of his clerk.. Remodeling has already started on this store.

LEONARD STRANSKY, proprietor of Trixie's Super Market, reviews price list for the day. Notice how front end of walk-in has been converted into large frozen foods billboard.

Kushner's No. 3 store at 1733 "O" St., like Trixie's Super, is located on the edge of the downtown section where there is a large apartment trade and no chance to extend off-street parking. Kushner believes the answer is to be found in expansion of frozen foods.

This store has only 23-ft. width but there is room to about double the floor space by extending the building clear back to the alley. Kushner recently purchased the site on which the store stands for $18,000 and started late in March to remodel and expand.

Refrigerated vending cases will extend the 120-ft. length of the selling space along the west wall. In addition to self-service vending fixtures for dairy produce and eggs, delicatessen, pre-packaged meats, service meats, fish, beer, and ice cream, the layout will include a 100% increase in lineal footage of frozen food cases.

New shelving will be installed on the east wall and the center aisle will be eliminated to facilitate traffic. New walk-in cold storage facilities will be installed at the rear of the store for meats, frozen foods, and green vegetables.

Because the addition will extend clear to the alley, Kushner is planning to install an incineration system. There will be no room for garbage cans on the alley, but the incinerator will eliminate the need for the old-fashioned disposal system. Everything will be burned, including green leaves, except cans and bottles. Ashes will be reburned, so that the store will have to dispose of ashes only every other week.

The Quality Line

A leader for 55 years! Manufacturers of quality commercial refrigeration; with distribution backed by well planned advertising and service

available in some territories, Weber distributor-dealerships. Write for information.

WEBER

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ONE OF THE WORLD'S FOREMOST DESIGNERS AND MANUFACTURERS OF COMMERCIAL REFRIGERATION AND COMPLETE MARKET FIXTURES.

NOW!
Cash-in on fast moving Howard Freezers. Priced for food plans or retail sales. Upright and chest models. 50 years' experience in the refrigeration industry.
LUSH TERRITORIES FOR DEALERS, DISTRIBUTORS, and REPS—write for details.
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Export Div.—250 Park Ave., New York, N.Y.

Put SOCK in your sales
with the mighty new CHAMP of 1953
The little fighter with the high-capacity punch
THE POWERFUL NEW TEMPRITE
BANTAM-100 CARBONATOR

Weighs only 28 lbs. Measures only 13½" long, 9½" wide, 12" high!

FULLY AUTOMATIC, delivers up to 100 gallons per hour of highly carbonated water. Use with any type cooling system!

EASY TO HANDLE; pump and motor, relay and carbonator assembled together for easiest possible installation!

EASY TO SELL because of high capacity operating efficiency! Soda fountains, roadside stands, restaurants, bars and taverns; they're all ready for Temprite's Bantam-100!

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RESTAURANT & BAR EQUIPMENT

CENTRAL KITCHEN prepares meals for three food operations and in-flight meals for the airlines.

Airport Restaurant

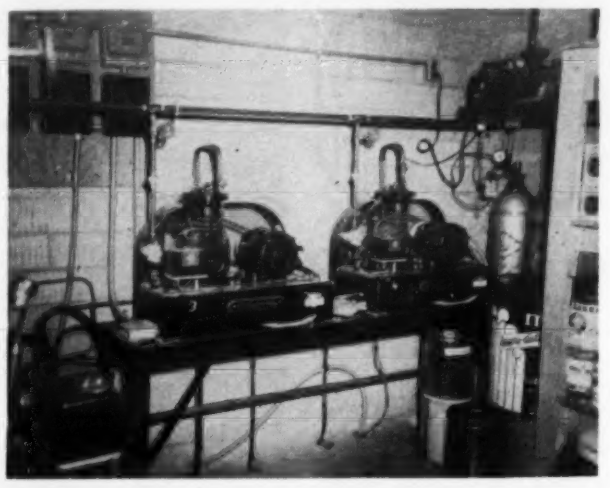
Kitchen Serves Coffee Shop, 2 Dining Rooms; Refrigeration Firm Gets Profitable Publicity

FORT WAYNE, Ind. — Providing the restaurant at the municipal air terminal here with practically all equipment needed has helped focus restaurant trade attention on the services offered by Rhoads Refrigeration and Store Equipment Co., Inc.

Installing equipment in public places such as this one results in profitable publicity for the firm, says Merrill Swaider, service manager for Rhoads. This particular job also gave the company valuable experience in preparing complete equipment specifications that later stood it in good stead in bidding on government contracts, which now amount to a large share of the firm's volume.

The airport restaurant is operated by a local department store—Wolf & Dessauer. It consists of a coffee shop, small private dining room, and large public dining room, all grouped around the centrally located kitchen. Rhoads completely equipped the restaurant, except for the chinaware.

Refrigerated fixtures installed include a walk-in cooler, a soda fountain, five water stations, an underbar reach-in, salad cabinet, and milk cabinet. They are situated in the kitchen and coffee shop and are served by remote refrigeration units located in a combination machinery and storage room right behind the kitchen. The refrigerant tubing between units and equipment runs through 2½ in. conduits built into the floor.



THE UNITS, three ½-hp. and one ¾-hp. jobs, are mounted on stands 30 in. high for easy servicing.

The units in the machinery room—three ½ hp. and one ¾ hp. jobs—are mounted on stands which raise them about 30 in. off the floor for easy servicing. There are two stands, with two units mounted side by side on each stand.

On each machine is a label listing Rhoads' address and day and night telephone numbers. The label also notes that Rhoads is an authorized Frigidaire service firm.

One of the ½ hp. condensing units serves the walk-in cooler. Another serves the reach-in refrigerator, salad cabinet, and milk cabinet. The third is hooked to the soda fountain and one water station.

The ¾ hp. unit serves the other four water stations.

Besides these fixtures, the kitchen is also equipped with several self-contained fixtures. These include two 27 cu. ft. reach-in refrigerators, ice maker, ice cream cabinet (all Frigidaire) and a 25-cu. ft. Amana upright freezer.

In addition there are the usual range and broiler units, dishwasher, slicer, peeler, mixer, stainless steel sinks, and stainless steel worktables, all furnished by Rhoads.

Both the coffee shop and public dining room are air conditioned by a 15-ton Trane unit providing zone control.

The dining room is made particularly impressive by full-length floor to ceiling windows that fill an entire side of the room. Through these windows, diners get an unobstructed view of the airport's runways and plane loading stations. This makes the restaurant a popular spot on Sundays and in the evenings.

The restaurant draws most of its trade from Fort Wayne residents rather than from airlines' passengers, according to Mrs. Margaret Barnes, manager. Passengers are usually in too much of a hurry to stop for a full meal, she explained.

However, one of the services offered by the restaurant is to provide in-flight meals for the airlines. These are prepared in the kitchen and then loaded on planes for serving while in the air.

Welty Joins Trane Salt Lake City Office

LA CROSSE, Wis.—The appointment of Ralph Welty to the Salt Lake City sales office has been announced by The Trane Co. here, manufacturer of heating, air conditioning, and ventilating equipment.

He has several years experience in industrial sales engineering in the western states.

Magic Chef Appoints Eight Distributors In Southeast

ST. LOUIS—Magic Chef's distributor line-up in southeastern U. S. has been tentatively completed with eight recent appointments, announced by Marc W. Pender, sales vice president.

Named to handle the full Magic Chef line were: Gambill Distributing Co., Nashville; Long-Lewis Hardware Co., Birmingham; Orgill Bros. Hardware Co., Jackson, Miss.; Orgill Bros. Co., Memphis; and Stratton-Baldwin Co., Inc., New Orleans. All will distribute gas ranges, electric ranges, room air conditioners, and gas and oil home heaters. Orgill Bros., Memphis, and Stratton-Baldwin formerly distributed incomplete Magic Chef lines.

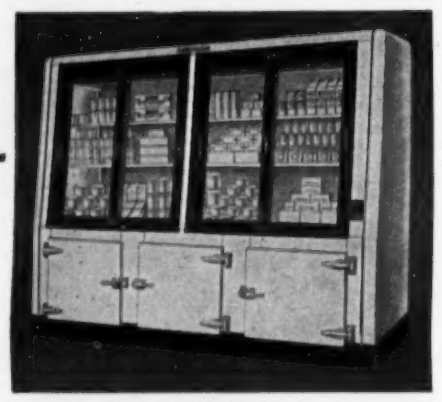
Also in the southeast, W. H. Best & Sons, Goldsboro, N. C.—G. & B. Distributing Co., Charlotte, N. C.—and Jacobi Hardware Co., Inc., Wilmington, N. C., have been assigned as exclusive home heater distributors for their territories.

Air Conditioned Market Opens In Bessemer, Ala.

BESSEMER, Ala.—Air conditioned, "Food Town," a completely new and modern food store, has just opened for business at 700 19th St. here. It is 100% self-service.

Pinnacle

MOST COMPLETE LINE of REFRIGERATED EQUIPMENT IN THE COUNTRY!



OPEN SELF SERVICE
porcelain in and out
Dairy cases
Meat cases
Vegetable cases
Open Milk Cases—Self-Con.
Self-Defrosting—Freezers

DELICATESSEN CASES
porcelain in and out
54 inches high—3 shelves

REACH-IN BOXES
all sizes—
remote & self contained
Porcelain in and out
Stainless in and out
Stainless front—alum ends

FULL VISION FREEZER CASES
54 inches high Freezer cases
porcelain in and out

Pinnacle provides a real sales opportunity and BIG PROFITS FOR YOU!

$ $ $

BUTCHER CASES
porcelain in and out
Double Duty cases
Single Duty cases
34 inches wide and
40 inches wide—

FULL VISION CASES
porcelain in and out
54" high cases
41" high Full Vision Lowboy
41" high Double Duty Lowboy
porcelain or formica tops

REACH-IN FREEZERS
Upright Reach-In Freezers self-contained—all sizes—
porcelain in and out
stainless in and out
stainless front—alum ends

WALL BOXES
porcelain in and out
Dairy wall boxes
Beverage wall boxes
Dairy wall boxes—self-con.

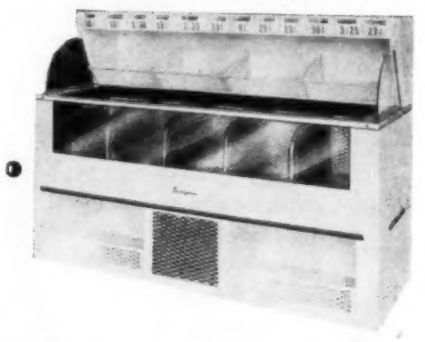
A few exclusive Pinnacle franchises are still available.
Wire or write today for full information, literature, etc.!

Pinnacle EQUIPMENT CORPORATION
FLEETWOOD, PENNSYLVANIA

EXPORT DEPARTMENT—39 Broadway, New York.

Today's Best Seller!
Cunningham

Frozen Food
Dairy Products
Ice Cream
Fresh Vegetables
} Display Cabinets

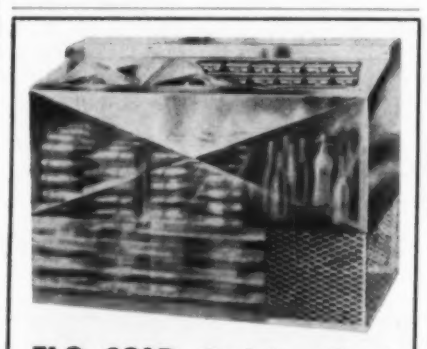


● Pictured, our new 1953 Model, 6 foot, open type, Fresh Vegetable Cabinet.

Cunningham Cabinets are Designed and priced for the market where you can make sales every day.

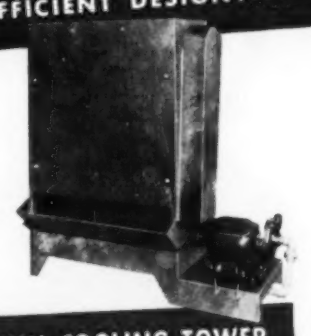
Write for our 1953 Catalog and the "Cunningham Sales Plan."

Cunningham Products Company
8790 Grinnell • Detroit 13, Mich.



FLO-COLD *Stainless Steel*
DRINKMASTER
ICE CUBER-COOLER
"A CASE OF COOL JUDGMENT."
Mfg. by
United Friguator Engrs.
Menominee, Mich.
Write for free 8" x 10" photos

LARKIN MEANS EFFICIENT DESIGN....

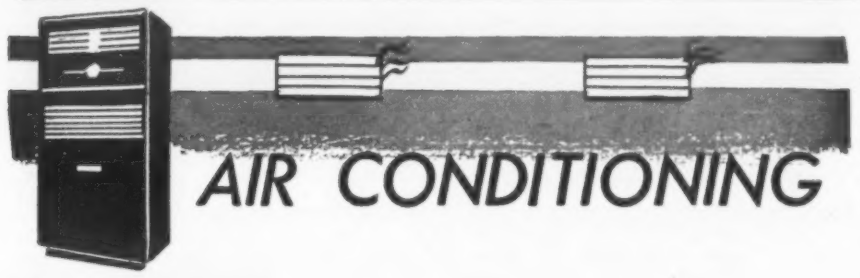


LARKIN COOLING TOWER

All Larkin refrigeration and air conditioning equipment is designed to give peak performance at low operating costs, whatever the requirements. The same organization that produced the original, patented cross-fin coil maintains a constant effort for better, more efficient design. Just one more reason why Larkin leads.

Manufacturers of the original Cross-Fin Coil • Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers • Disseminator Pans.

WATCHDOG OF THE NATION'S FOOD SUPPLY
LARKIN COILS
519 MEMORIAL DR., S.E. • ATLANTA, GA.



'Shock Treatment'

Westinghouse Ad Series Features Photos Showing Employes Suffering from Heat

NEW YORK CITY—Close-up photographs of workers in office, plant, and store, wilted and dripping with sweat, are being used by Westinghouse Electric Corp. to "shock" business executives into doing something about the heat this summer.

These life-like pictures dominate an advertising series that Westinghouse is currently running on a biweekly schedule in *Time* Magazine. Promoting the "Unitaire" packaged air conditioner, the series of nine advertisements will continue into August, said Albert E. Scherm, Jr., Westinghouse account executive for Fuller & Smith & Ross, Inc., advertising agency.

Six of the ads emphasize the "negative" approach to air conditioning—showing what happens when you don't have it. The remaining three take a "positive" approach—illustrating specific benefits that air conditioning will bring.

"We felt," said Scherm, "that by accentuating physical discomfort and work stoppages directly attributable to heat and humidity, we could get more shock value to attract attention and help drive home our points.

"We felt that we did not need to sell the general idea of air conditioning here. Rather, we started out with the aim of playing up strong product features.

"We have a dominant, interesting illustration, a positive headline containing a customer benefit, and tied in visually with good product identification in the logo, plus short, legible copy which expands on the benefit in the headline and presents product features which back up this statement".

To cite an example, the ad scheduled to appear in the May 22 issue of *Time* carries a photograph of a heat-suffering cosmetics clerk leaning listlessly on the counter, looking as though she dreaded the thought of serving another customer. Headline reads: "Banish summer sales sag."

FATIGUED TYPIST is one of the photos used in the Westinghouse ad series to make businessmen aware of need for air conditioning.

Copy says: "Summer may kill the best sales program. It keeps customers away, wilts employes, sends costs up. But Westinghouse Unitaire Conditioners keep the heat outside.

"The Unitaire can be installed without important store alterations. It is economical to run, and helps to promote sales without loss of profits. . . ."

The positive approach ads point out that air conditioning helps to sell winter coats in August, preserves the color and freshness of chocolate candy, and keeps customers crisp and comfortable.

Scherm says that Westinghouse is merchandising the ad series to its distributors and dealers through *Time* cover mailers. These mailers carry the ad illustration as the cover picture on a reproduction of the magazine's cover and give the sales pitch inside.

These are mailed to reach distributors and dealers on about the same day as the magazine appears on the newsstand, Scherm, said.

"We are also pushing one other aspect of this campaign," Scherm declared. "Westinghouse has a very strong classified telephone directory program which most, if not all, the distribution has used for the past few years. In these ads, the last paragraph directs prospects to the local organization."

Servel Adds Four Agents In Air Conditioning Div.

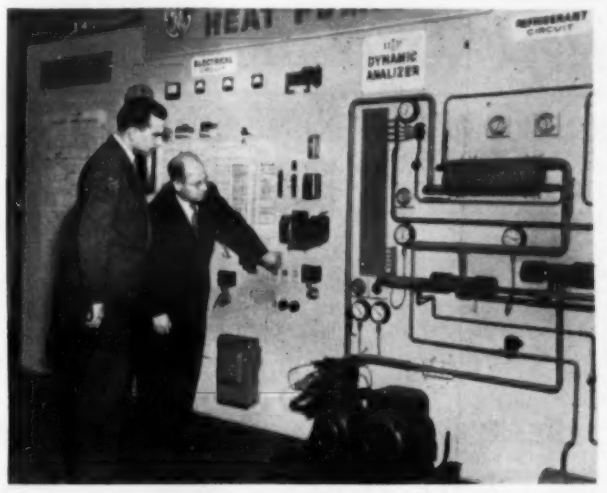
EVANSVILLE, Ind. — Four new appointments to Servel, Inc.'s sales and service staff in the air conditioning division have been announced by H. R. Nielsen, sales manager.

C. P. (Charlie) Holcombe is an air conditioning sales representative in the southern region.

George Anderson, who has been with Servel for 12 years in the engineering department, is now in the Evansville air conditioning service department.

W. P. (Walt) Dwyer is in the eastern region as an air conditioning sales representative.

R. L. (Russ) Brown is on the Evansville staff as an air conditioning sales engineer in the application engineering department.



"DYNAMIC ANALIZER" over which are spread the working parts of a G-E heat pump in actual operation is used to demonstrate the performance characteristics of the all-season air conditioner at the General Electric Heat Pump Institute. G. K. Marshall, manager of commercial engineering, works the board as J. C. Jenkins, application engineer, watches.

G-E Heat Pump Institute Offers Training Classes

BLOOMFIELD, N. J.—A comprehensive training program to keep pace with a growing consumer interest in the General Electric heat pump has been launched by the G-E Heat Pump Department according to H. M. Brundage, general manager of the department.

Electric utility personnel, G-E distributors, engineers, service managers, service men and salesmen are currently attending classes at the G-E Heat Pump Institute here to learn all phases of the heat pump.

An all-electric year-round air conditioner that cools without water and heats without burning fuel of any kind, the heat pump isn't just another air conditioning machine.

Subjects covered in the school work include principles of the G-E heat pump, application engineering, product service, product features, electric load studies, and heat pump sales and promotion. Students are divided into groups and special emphasis is laid on the phases of instruction most important to them.

An interesting feature of the Institute is the "Dynamic Analyzer," a large board on which are spread the working parts of a G-E heat pump, in actual operation.

Special valves, controls, dampers, and gauges are used to demonstrate the performance characteristics of the heat pump under a variety of operating conditions and permit service men to study service and maintenance routines in detail.

Electric utility personnel interested in attending the institute for the five-day course are invited to write to P. F. O'Neill, manager of utility contacts, General Electric Co., 5 Lawrence St., N. J.

HERE'S WHY ALL REMCO PRODUCTS SELL FASTER—SAVE YOU MONEY

E-Z-SEE LIQUID-FLO-INDICATORS with the exclusive sensitive flap, responsive to changes in flow. E-Z to SEE thru, these indicators now permit the serviceman to analyze accurately functions of the expansion valve by action or position of the flap. Positively leakproof — perfectly safe.

SUPER-FLO FILTER-DRIERS for both original equipment and replacement. Check SUPER-FLO's amazing low price against ordinary driers which do not have massive fiberglas *depth* filters, *molded* drying elements and *spun-end* copper shells. Perfectly free flow. Remco also manufactures famous Cross-Flo and Standard Duty driers.

FROST-TITE FLARE NUTS positively eliminate creeping, cracking or splitting of nuts in refrigeration systems by providing relief for expanding ice through patented forged frost-relief slots. Yet they cost no more than unrelieved flare nuts.

Available to the trade through wholesalers everywhere.

REMCO
INCORPORATED
ZELIENOPLE, PENNSYLVANIA

Mr. Furnace Manufacturer:
...NOW
YOU CAN SELL
YEAR-AROUND
COMFORT
WINTER Air Conditioning AND SUMMER Air Conditioning
YOUR HEATING UNIT PLUS Tecumseh HERMETIC
When designing your furnace to include summer cooling for a true year-around air conditioning system, consider the advantages of a completely sealed Tecumseh hermetic compressor. The 3 H.P. Tecumseh hermetically-sealed compressor is designed primarily for use in year-around systems. This compressor will help your engineers to design the most dependable and efficient year-around air conditioning unit at the lowest possible price.
Yes, these new Tecumseh hermetics are the only compressors in the refrigeration industry today that offer so much for so little. Over 14 million Tecumseh hermetics now in the field attest to the acceptance of the Tecumseh hermetic. That is why furnace manufacturers are specifying Tecumseh in their new cooling units. And that is why it will more than pay you to investigate Tecumseh right now by writing us for complete details.
Remember, you can't go wrong when you specify the best—Tecumseh.
TECUMSEH
TECUMSEH PRODUCTS
TECUMSEH, MICH Company
EXPORT DEPT.: 2111 WOODWARD AVE., DETROIT, MICH.

★ See the Tecumseh Hermetics at Booth 2-501 in Chicago, January 26 to 30.

They'll Do It Every Time . . . . By Jimmy Hatlo

THE BIG COMPANIES HAVE AN ARMY OF $50,000-PER-YEAR ENGINEERS TO DESIGN THE PERFECT MOTOR....
THIS IS IT! MOST ADVANCED MOTOR IN THE WORLD TODAY.... WITHSTOOD EVERY TEST ON THE PROVING GROUND! NOT A BUG IN IT!
..REVOLUTIONIZE THE INDUSTRY...
JIMMY HATLO
THEN SOME FUGITIVE FROM A TRADE SCHOOL COMPLETES THE OVERHAUL TO SUIT HIMSELF....
?
SILLY TO USE EIGHT BOLTS.... FIVE'S PLENTY...NO SENSE WAITING FOR ANOTHER METAL GASKET... I JUST HAPPEN TO HAVE A CORK ONE HANDY...THAT STARTER CABLE DON'T HAVE TO BE SO HEAVY.... ANY OIL WILL DO....
THANX AND A TIP OF THE HATLO HAT TO JOHN HORNIK, MEETING, HAYNE AND MARKET STS., CHARLESTON, S.C.
3-19
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Have You READ 'Peace and Progress' Yet?

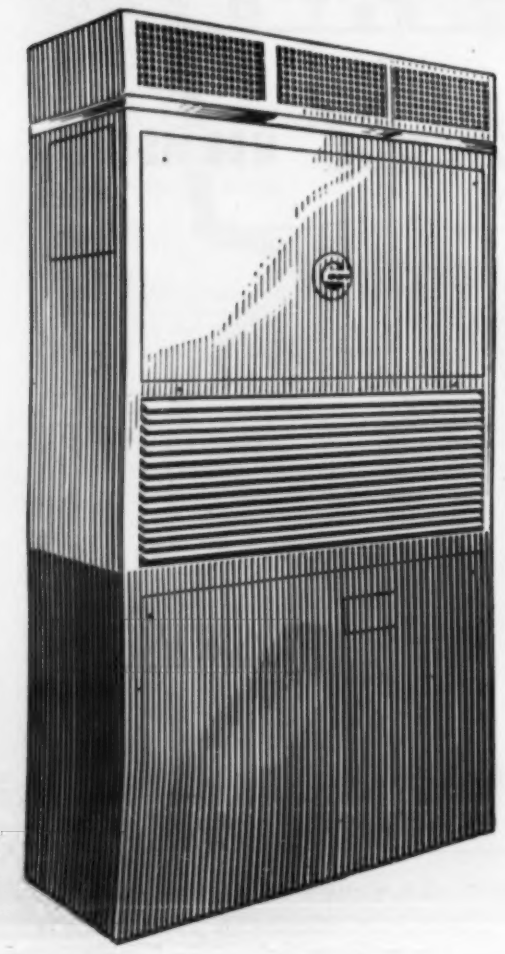
WE TAKE OUR OWN MEDICINE . . . AND EVERY DAY, TOO!

Temperature control is the key to precision manufacturing. That's why every Chrysler Airtemp Compressor is machined, assembled and tested in a completely Air Conditioned Factory!

What's the result? The best air conditioner made today . . . one that gives year after year of trouble-free, dependable operation. Here's why:

- Dust and dirt—enemies of trouble-free operation—cannot get into the compressor during assembly.
- Components do not rust or corrode from contact with moist hands during either manufacture or assembly.
- Tools, jigs and fixtures remain constant regardless of temperature variation . . . thus assuring quality that is always the same day after day.
- True precision assembly . . . better work . . . result from high employee morale at Chrysler Airtemp. This is due to elimination of excessive heat and humidity.

Features like this are your assurance that you're selling the best when you sell Chrysler Airtemp. Get all the facts now.



"Packaged" Air Conditioners
Six models from 2 to 15 H. P. capacity meet most cooling needs.

Guaranteed by Good Housekeeping

Comfort Zone FOR PROFIT

Chrysler Airtemp

AIR CONDITIONING • HEATING
for HOMES, BUSINESS, INDUSTRY
Airtemp Division, Chrysler Corporation, Dayton 1, Ohio

Airtemp Division, Chrysler Corporation AC&RN-5-53
P.O. Box 1037, Dayton 1, Ohio

Please send full details on the Chrysler Airtemp Comfort Zone "Packaged" Air Conditioning proposition.

Name_____

Address_____ Phone_____

City_____ Zone_____ State_____

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VOLUME 69, NO. 3, SERIAL NO. 1,261, MAY 18, 1953

"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—*Charles A. Dana.*

People Need Excuse To Buy Air Conditioning

For a long time salesmen have known that the reason people *give* for buying a so-called luxury or labor-saving device is not the *real* reason. Sometimes they don't even know the real reason themselves.

But of this you can be sure: they don't want to admit that they are coddling themselves. That's why it has been so difficult to sell dishwashers. Women don't want their husbands to think they aren't working so hard. Could the same thing apply to the purchase of home air conditioning?

Alvin B. Newton, imaginative Vice President of Acme Industries, has reported on a house to house residential air conditioning survey in Texas. He wanted to find out Who, What, Where, When, and Why home owners bought air conditioning.

Some of the Reasons Why these Texas home owners invested in all-year air conditioning (remember, these are the reasons they *gave*):

Health.
Increased longevity.
Less outside noise.
Less dust.
Protection against storm damage.
Elimination of mildewing.
Increased value of the house for resale.
Neighborhood prestige.

Comfort ranked way below the other reasons. Bottom of the list.

Probably it was the real reason. But people have a guilt complex when they purchase something which makes life easier for them. They think they shouldn't *indulge* themselves. So they look all around Robin Hood's farm for "better" reasons-to-buy.

All the reasons listed above, of course, are valid. No doubt they should be the selling points *emphasized* by air conditioning salesmen.

Help prospects justify the purchase of air conditioning to their own consciences!

Give 'em an excuse for being comfortable!

Does This Situation Make Sense?

Here are some reasons why the capital gains tax defeats its own purpose:

(1) Proceeds of the sale of one asset nearly always are reinvested in another security.

(2) High capital gains taxes deter people from selling securities at a profit.

(3) Hence the government, by being greedy, gets no tax from *untransacted* potential sales.

If the capital gains tax were reduced to, say, 10%, experts believe that the Treasury Department actually would receive much more tax money from this source.

And we, the people, would be better off. So would business, which would have a more fluid market for its securities.

Write your Congressman, and Senators, today.

Air Conditioning a 'Must'

Apartment House Tenants Demand It, Builders Use It To Meet Competition

NEW YORK CITY — Apartment house tenants want guaranteed weather these days with the result that air conditioning has become the biggest new idea in apartment building.

Apartment investors everywhere are facing up to the fact that tomorrow's apartments may have to be air conditioned to compete with the lower costs and rents of yesterday's buildings—for the same reason investors today would not dare put up an office without having it air conditioned.

So report the editors of *The Architectural Forum* in the current issue of the professional magazine in a comprehensive article reviewing the merits of small room coolers (fan-coil unit air conditioning) versus giant compressors (conduit air conditioning).

EAST COAST IS LEADER

"Apartment air conditioning has made the most headway along the East Coast from New York to Florida and across the South to Texas," the article says. "But increasing activity is reported almost everywhere.

"For instance, three big, fully air conditioned apartment houses were recently built in Pittsburgh; others have risen in Roanoke, Indianapolis, and Wichita. Still others are planned for St. Louis and Chicago . . . as many as 500 air conditioned apartment structures ranging from walk-ups to 26-story skyscrapers have gone up since the war.

"The rising demand for apartment air conditioning is perhaps best illustrated by what is happening at New York City's Manhattan House. To hold down costs, central cooling was not provided. But realizing that some of their well-heeled tenants might want air conditioning, N. Y. Life spent $60,000 for extra wiring and outlets so that their tenants could install room coolers if they wanted to.

TENANTS WANT MORE

"However, in last summer's steaming heat, tenants swamped N. Y. Life with requests for still more wiring and outlets. At last count 247 of the 580 tenants had room coolers—a total of 400 cooling units. Some apartments have three or four units apiece and new coolers are constantly appearing in windows."

The Forum reports two big houses have just gone up on New York's East Side with central cooling systems, that Philadelphia's high rent market has been cracked by air conditioning, and that practically all of Washington's elevator apartments have been air conditioned since the war.

Because air conditioning is insurance against future obsolescence—especially in the high rent bracket and high temperature belt—the Federal Housing Authority favors central cooling, calls it a "very desirable plus factor," according to the magazine, noting that FHA will usually underwrite the first cost for apartment air conditioning.

Costs, the *Forum* notes, depend on the size of the structure and the type of system used, among other factors, but, including heating, central air conditioning systems are running 10-12% of the total cost for new apartment buildings, with heating alone running 4-5%.

New point-of-sale display for United States Air Conditioning Corp.'s 1953 window-type room coolers is demonstrated by R. D. Mclain, manager of the refrigeration division, to Lloyd Minion of the division's sales department.

UsAirco Point-of-Sale Display Has Spring Theme

MINNEAPOLIS — A point-of-sale display designed to tell the story of UsAirco room coolers dramatically and forcefully at a glance, has been announced by David E. Feinberg, vice president in charge of the United States Air Conditioning Corp.'s packaged refrigeration division.

"A six-color, three dimensional display, it stresses the theme of spring-like temperature in the heat of summer by utilizing spring flowers as the vehicle for the sales message," Feinberg explained.

"The equipment's most important selling points—thermostatic control, 5-year warranty, availability in three sizes, concealed control panel, and multiple function—are emphasized in concise copy."

The display is 73 in. high, 36 in. deep, and 45 in. wide, but folds into a compact carton for shipping. It is simple to assemble and light in weight for easy change of position in the store.

Booklet Tells Owner How To Install Air Conditioner

CHICAGO—A manual claimed to present all the information the owner of a window-type room air conditioner needs to install, operate, and maintain his new unit has been published by Mitchell Mfg. Co. here.

"Anyone who purchases an air conditioner can effect substantial savings by installing the unit himself," the company said in announcing the brochure, which makes generous use of pictures.

The booklet provides a "crystal clear" index in its pages, graduated in size so the contents of each section are revealed at a glance. The material covers how to unpack the unit, how to install it, operation—care and maintenance, and specifications and operation data for special installations.

Federal-Rice Drug Becomes Air Conditioning Distributor

PITTSBURGH—The Fresh'nd-Aire Co., div. of Cory Corp. has appointed Federal-Rice Drug Co. wholesale distributor of air conditioning units, humidifiers and fans for the home, according to G. N. Rogow, sales manager.

New products on display at Federal-Rice showroom probably will be promoted on the distributors sponsorship of the network television presentation, "Double Play," starring Leo Durocher and Lorraine Day.

New department manager, E. McGinnis, has been in charge of the company's traffic appliance department.

Remington Takes 1-Day Service Meetings to Distributors Under New Expansion Program

NEW YORK CITY—A major step in the expanding national service program of the Air Conditioning Div. of Remington Corp. began at the Henry Hudson hotel here recently with the first of four intensive one-day service meetings to be held throughout the country, reports M. L. Judd, general sales manager, Remington Corp.

Three more meetings, one each in Atlanta, Dallas, and Chicago—were scheduled to be held in April.

Purpose of the regional meetings is to bring directly to distributors of Remington room air conditioners, particularly those recently appointed, the latest information on Remington service, policies, installation, and maintenance technique, and the new "strip chassis" program.

The latter is an innovation designed to facilitate field service of Remington's new completely-sealed hermetic system for 1 and 1½-hp. console units.

The New York meeting, under the direction of Carl F. Zauner, Remington national service manager, and Larry Bonhotal, application engineer, utilized slide films and actual units, both console and window-type, to demonstrate the new equipment and methods.

The four regional meetings were planned, Zauner said, in order to avoid the difficulties inherent in holding one large national meeting. He described these as the excessive cost in time and money to distributors who must travel long distances to attend, too many people in attendance, and the reluctance of many distributors from one region to discuss their problems in front of those from other regions who do not face the same conditions.

Attending the New York meeting, which included luncheon, cocktails, and dinner, were Remington regional sales managers John P. Moffitt, New England; William H. Peters, New York area; and E. M. Johnson, southeastern states. William Figg, Remington district service manager, assisted in the demonstrations.

Field service managers of independent distributor firms who attended were:

William A. Mackie, Claude S. Coad, Francis C. Cotterall, and M. Burton, all of Wesco, Newark, N. J.; Frank E. Gilmore and James McDermott, Times Appliance Co., New York City; George Messmore, Wesco, Baltimore; George V. Colie, Wesco, Trenton, N. J.; Charles E. Barrett, Wesco, Pittsburgh; Edward G. Miller, Danforth Corp., Pittsburgh; J. M. McEntee, Combustioneer Corp., Washington, D. C.; Milton M. Singer, Wesco, Philadelphia; Emil E. Iannone and C. J. McDermott, Service, Inc., New York City; John O'Connell, Henry N. Clark Co., Boston; and S. B. Cram, Plymouth Electric Co., New Haven, Conn.

WHY WAIT?
Get your new product info pronto. Use coupon on "What's New" page this issue. Use Key No. for fastest service.

"Here's your BEST BUY"

...when you need a large capacity EXPANSION VALVE

You get trouble-free operation on large air conditioning and commercial applications with the time-tested A-P Model 216. Accurately meters refrigerant to single or multiple coils . . . operates efficiently in any ambient temperature, in any position.

The job proved 216C comes in sweat or flange-type bodies . . . both with ¼" flare external equalizer connections. "Equa-Flo" distributors, for multiple feed coils, can be furnished for both models. Adjustable superheat, with range sufficient for all applications. Capacity 3½ to 11 tons, F12.

The ideal valve for large air-conditioning and commercial applications

...and don't forget the all-purpose Model 209

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Calculating Cooling Loads (2)

Because Peak Cooling Load Conditions Are of Strictly Transient Nature And of Short Duration, Undersizing of Equipment Will Prove Economical

Editor's Note—This is the second and concluding instalment of a paper by F. W. Deady of the Bryant Div., Affiliated Gas Equipment, Inc., which was presented at the Technical Conference on Year-Round Residential Air Conditioning sponsored by Lehigh university.

In it he discusses methods of calculating cooling loads for residential air conditioning. Deady places emphasis on the economy of undersizing equipment rather than planning the installation to be fully adequate to handle peak loads, which may be present during only a few hours of the cooling season.

"Experience has shown that glass heat gains will attain peak values somewhat earlier than wall heat gains. The peak total instantaneous cooling load will therefore consist of a peak glass heat gain plus some fractional part of the peak wall heat gain. Later on where the peak wall heat gain will have manifested itself, the peak glass heat gain will have been partially dissipated.

"The factors for wall heat gains have been shaded somewhat in order to bring them into accord, time-wise, with the glass heat gain factors. This has been necessary in order to provide for an easy means of calculating instantaneous over-all loads. Using the interim results of the aforementioned investigations as a guide, this shading has been based on a two to three hour 'lag' in time between these two load factors. They are somewhat different than the wall heat gain constants given in the ASHVE guide which are based on a 'lag factor' of four to five hours.

"Experience has pretty clearly demonstrated that radiant and convected heat transfer constitute a substantially greater share of the overall heat gain through glass areas than does conductive heat transfer.

FIGURING HEAT GAINS FROM GLASS SURFACES

The glass heat gain constants here are therefore given in terms of B.t.u./hr. heat gain per square ft. of area and are based on a 15° F. indoor-outdoor differential.

"By modifying them slightly so as to include a generalized proportion of conductive heat transfer it has been possible to avoid any necessity for a separate calculation of actual conductive glass heat gains. In order to determine the heat gain assignable to any given glass area, therefore, it is only necessary to multiply the actual area by the appropriate glass heat gain constant as selected from the table.

"Where higher than 15° F. indoor-outdoor design temperatures might be desired or made necessary by the extremities of outdoor conditions, the proportion of conductive heat gains will obviously increase from that built into the factors here. To compensate for such effects, additional adjustment constants are provided based on differentials of 20° and 25° F. These, when added to the base constants previously described, furnish an easy means whereby they can be made to provide the desired compensatory effect.

"It has been previously mentioned that shading has a measurable effect on the quantity of heat which a given area of glass will transmit.

"So far, we have spoken only in terms of the sensible heat quantities which will be transferred to the interior of a structure from its outer surroundings. We have not yet considered those increases in the total heat content of a structure due to infiltration or forced introduction of outside air nor have we considered the heat introduced in the form of uncondensed vapor which permeates and infiltrates the outer walls.

PREDICTING LATENT, SENSIBLE HEAT GAINS

"Ordinarily, we can accurately predict the heat gains, latent and sensible, which will be introduced as a consequence of the introduction of outside air if the amount and quality of the air actually introduced can be determined with sufficient accuracy. Experience has pretty well demonstrated that, where infiltration alone is concerned, this heat gain will generally average out for the typical residence at approximately 15% of the transmission heat gains.

"Where fixed quantities of outside air are introduced through use of outside air tappings into the return duct system or through use of exhaust fans or similar devices, the heat quantity introduced may be obtained directly from the enthalpy difference prevailing between the outside air and that on the inside of the structure and the c.f.m. capacity of the introducing mechanism.

"On the average, structures located in the general vicinity of Region II (i.e. that region experiencing a 16-25° F. range in daily dry bulb temperatures) will suffer an increase of 42 B.t.u./hr. in their normal heat gain for each c.f.m. of entering outside air. It is expected that little error will be introduced if this same factor is used for the other two regions," Deady said.

MOISTURE FROM WALLS NOT SO EASILY EVALUATED

"That moisture which permeates the walls of a structure is not so easily evaluated. Certainly the rate of in-flow tends to vary with the vapor pressure and, therefore, with the mean temperature of the wall itself. This, as we already know, varies primarily according to the sun exposure. Under certain circumstances it is conceivable that condensation accompanied by a heating effect can be occurring in one wall simultaneously with a heat-absorbing or cooling effect on another.

"Moisture condensing over night in an east wall could produce a heating effect in and around that wall. Later on, in the morning hours, with the sun striking on that same wall, evaporation with an attendant cooling effect on the surroundings might logically be experienced. This same cycle would be repeated successively on the south and west walls during the remainder of the day as the sun moved in those directions.

"I do not know whether an attempt has ever been made to quantitatively measure the magnitude of such an effect or, for that matter, the manner in which it might manifest itself. Certainly it would seem logical to expect that it would impose a modulating influence on the rate of transmission heat in-flow. If this were, in fact, true it might serve to level out or explain some of the discrepancies which have from time to time cropped up between expected and actual 'time lags' between internal heat gains and changes in outdoor conditions," Deady suggested.

COOLING LOAD FROM WITHIN STRUCTURE MUST BE FIGURED

"Another basic source of cooling load which must be figured into the total load on the equipment is that which emanates from within the structure. By this is meant that heat which is given off from occupants, lights, cooking, etc. In general, methods for evaluating the magnitude of these loads have already been well and clearly established. No rigorous rule as to their method of application has been worked out, however, since, from the standpoint of an instantaneous load calculation, much depends on the timing and localized nature of their occurrence.

"For example, lights generally will not be required during periods of peak sun loads; cooking operations are performed only at certain periods of the day and their resultant cooking loads usually last for only short periods of time; frequently the cooking operation is accompanied by the use of an exhaust fan in which case the load imposed will tend to become primarily an infiltration load; also, people tend to congregate at certain times in certain rooms rather than in others and in varying numbers.

PROPER CALCULATION REQUIRES CONSULTATION WITH OCCUPANT

"Certainly," Deady said, "the load imposed by entertaining a sizeable group of people in the afternoon in the living room will have an entirely different magnitude from that imposed by a small, intimate gathering in the evening hours in a basement recreation room. Obviously these internal cooling loads are in a large measure going to be typical of the physical arrangement of the structure itself and of the living habits of its occupants."

A successful evaluation of them will definitely require a certain amount of cooperation and exchange of information between the designer or layout man and the owner of the property. Once such information has been obtained, however, it is generally an easy matter to determine the magnitude of such of these loads as will actually be coincident with the period of the maximum transmitted, radiated, and infiltrated heat quantities

"The total of all these previously discussed load factors when finally summed up will give a value for the total instantaneous peak load on the cooling equipment and will represent the maximum rate of heat gain to the structure under the most extreme conditions which might be expected.

"There are two general methods by means of which we can arrive at this figure. The first treats the entire volume to be conditioned as a complete entity—disregarding all interior partitions and treating only those wall, floor, and ceiling surfaces which separate the conditioned from the unconditioned spaces. It gives a lumped instantaneous load on the structure as a whole and provides a simple, easily attained basis for the sizing of central-station type cooling equipment.

"The second considers the space to be conditioned room by room. Such a method inherently provides means whereby the peak load on any individual room can be evaluated in terms of the necessary number, sizing, and location of supply and return registers or for the sizing and location of unit convectors or room air conditioners. This method likewise offers a basis for the sizing of central station equipment if one important qualification is observed, that is:

"In totaling the individual room heat gains care must be taken to ensure that each room heat gain figuring in the total is taken for the same time. This will mean that a number of individual room heat gains will have to be calculated twice—once for the leak load on the room itself and once for the peak load time considering the structure as a whole.

CLEAR-CUT PROCEDURE STILL LACKING

"A clear-cut procedure for the sizing of equipment with respect to a peak instantaneous cooling load is lacking at the present time. Let us look at the situation this way: if the output capacity of the cooling plant is made equal to the peak cooling load, we know that the equipment will achieve continuous operation only under peak cooling load conditions. These peak load conditions will be of a strictly transient nature and of only short duration. In fact, over an entire cooling season, normally only a few hours of operation will be devoted to a peak cooling load.

"It follows that, over a substantial part of the season, the equipment must either operate at reduced capacity or synthesize this condition by operating intermittently under the control of a room thermostat. In any event, the sensible to latent heat removal capacity ratio of the equipment will tend to vary."

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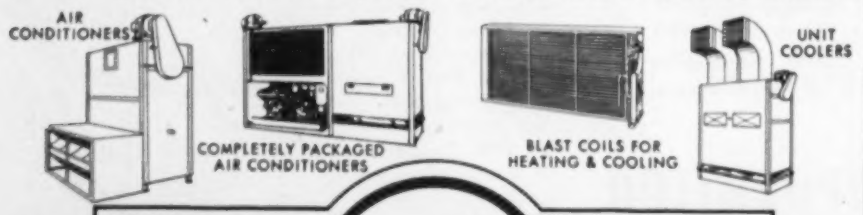

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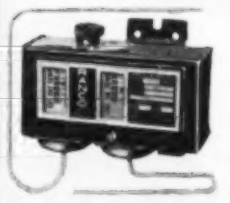

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Sales

Kind of Business and Geographic Division	Per Cent Change —Mar. 1953— from Mar. 1952	from Feb. 1953	3 Mos. 1953 from 3 Mos. 1952	March 1953 Panel No. of Firms Reporting	Reported Dollar Values (add 000)
Appliances and specialties wholesalers	+34	+ 5	+21	114	26,320
New England	+52	+10	+29	13	2,343
Middle Atlantic	+35	+ 1	+16	24	10,359
East North Central	+13	— 9	+24	14	1,867
West North Central	+49	+13	+27	13	1,927
South Atlantic	+35	+15	+20	21	3,750
South Central	+29	+ 3	+18	11	2,185
Mountain	+20	+14	+18	7	1,308
Pacific	+31	+ 9	+36	11	2,581
Middle Atlantic	+24	+45	0	15	834
Middle Atlantic	+24	+45	0	15	734
East North Central	+22	+21	+ 7	19	227
West North Central	— 2	—24	+11	5	117
South Atlantic	+25	+22	+14	21	572
South Central	+34	+29	+ 3	4	203

Inventory, End-of-Month (At cost)

Kind of Business and Geographic Division	Per Cent Change —Mar. 1953— from Mar. 1952	from Feb. 1953	March 1953 Panel No. of Firms Reporting	Reported Dollar Values (add 000)
Appliances and specialties wholesalers	+ 9	+ 9	90	29,084
New England	+ 7	+22	10	2,196
Middle Atlantic	—12	0	16	7,571
East North Central	+22	+11	11	3,279
West North Central	— 2	+ 6	12	2,621
South Atlantic	+27	+11	17	4,931
South Central	+13	+10	9	3,315
Mountain	+47	+12	7	2,317
Pacific	+22	+19	8	2,854
Refrigeration equipment, parts (com'l)	— 3	+10	58	4,008
Middle Atlantic	—13	+25	12	1,192
East North Central	0	+ 1	14	547
West North Central	+ 4	+ 3	5	416
South Atlantic	+ 3	+ 8	21	1,492
South Central	*	*	*	*

*Insufficient data to show separately.

Refrigeration, Parts Wholesalers Sales Show First Quarter Gain of 7%, March Climbs 27% over Feb.

WASHINGTON, D. C.—First quarter sales of refrigeration equipment and parts wholesalers were up 7% from a year ago and those of wholesalers of electrical appliances and specialties rose 21%, according to the Bureau of the Census.

March sales of the former group were 24% ahead of March, 1952 and increased 27% over February, 1953.

Sales of appliance and specialty wholesalers in March advanced 34% compared with March of last year and were 5% better than the preceding month. This group reported the principal gain over March, 1952, and shared with metals wholesalers the largest increase over first-quarter 1952 sales.

Inventories of refrigeration equipment and parts wholesalers at the end of March declined 3% from a year ago and were up 10% compared with stocks on hand Feb. 28. Appliance and specialty wholesalers' inventories on March 31 increased 9% compared with both March, 1952, and February, 1953.

March sales of wholesalers as a group gained 12% over the previous month and were 13% above a year ago. First quarter sales were 6% higher than the like 1952 period. End-of-March inventories were 3% above Feb. 28 but 1% below inventories of a year ago.

Chase Film Shows Production Of Modern Brass Mill Products

WATERBURY, Conn.— A new 16-mm sound motion picture, in color, "The Science of Making Brass" is now available for showings to brass users throughout the United States, according to E. J. Malvey, advertising manager of Chase Brass & Copper Co. Inc., subsidiary of Kennecott Copper Corp.

"The new color film," Malvey reported, "runs for 29 minutes and painstakingly depicts the production of brass in terms understandable to the layman, from its beginning in the casting shop to its final distribution.

Extensive use of animation explains the details of casting, extrusion, drawing and rolling processes. Modern production and quality control techniques are shown.

The film is being offered on a loan basis to metal-working industries, technical schools and state and local technical groups. Requests should be addressed to Chase Executive Offices, Waterbury, Conn., or to Chase warehouses and sales offices.

"Slants on Service" is a "package" devised by the NEWS to meet the needs of its busy readers in the service and contracting business.

Heating Used Driers Gives Questionable Results

Questioned by an independent serviceman who's been "wondering if heating spent driers to drive off the water wouldn't save me money," John Bopp, chief chemist of Ansul Chemical Co.'s Refrigeration Division, answers:

"It is not a good idea to reactivate used desiccants (the drying material which removes water from wet refrigerant).

"The oil and other foreign material deposited on the desiccant will cause a marked reduction of efficiency as a result of heating. This point was checked in our laboratory by comparing samples of used and unused silica gel (refrigeration trade grade).

"Both samples of silica gel were reactivated at 300° F. for 48 hours; 350° F. caused excessive darkening of the used silica gel due to oil decomposition. They were then exposed to air of 80% relative humidity for 18 hours. If we assume that the efficiency of the unused silica gel is 100%, the used silica gel on reactivation only shows an efficiency of 49.4%.

"This means that a desiccant which has been used (and contains oil and other materials) regains only half of its efficiency on reactivation. Tests in contact with wet refrigerant would be equally disappointing. This same test was not carried out on the other commonly used desiccants, however, it is to be assumed that a similar reduction in efficiency would be encountered," Bopp says.

"It should also be mentioned that many drier units are assembled with soft solder. The temperature at which the unit is heated must be carefully controlled to avoid weakening the joints between the shell and the end caps and also the joints between the end caps and the soldered fittings where these are not integral parts of the end caps.

"The difficulties encountered with loss of efficiency in the desiccants and possible weakening of the shell construction makes this undesirable."

Fisher Opens Branch Store

CHARLESTON, W. Va. — Jack Fisher, Inc., Lee St., featuring Philco refrigerators and other appliances, has opened a branch store at 4624 MacCorkle Ave., South Charleston.

The branch store will be managed by Mr. and Mrs. Dale Sharpe.

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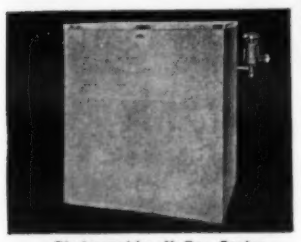
Mess Hall—Cafeteria Cooler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Sell your condensing unit with Filtrine models repeatedly named by V.A., Signal Corps, Air Force, etc. for X-ray and photo-labs. Under counter design and floor-mounted models with stainless steel work-table top. Filters (extra) to prevent scratched and pin-holed negatives.

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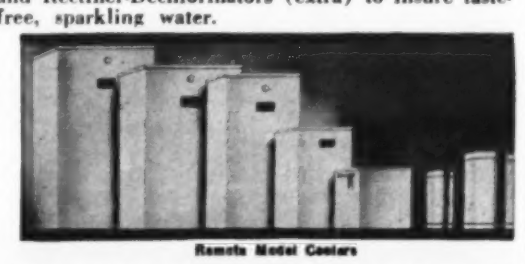
Sell your condensing unit with remote models for new and replacement jobs—all applications. Capacities 10-1000 g.p.h.; storage 7-300 gals. Filters, Rectifier-Dechlorinators available for all sizes.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Is the Coil Right?

How Knowledge of Basic Coil Design Factors Can Be Applied by Serviceman To Check Installation, Explained by Donovan of Bush

LANSING, Mich.—"It obviously is neither practical nor necessary for every refrigeration man to be a coil designer; however, if the service engineers and contractors have a general knowledge of the fundamentals of heat transfer and coil performance, they will then better appreciate and understand the selection of coils for different applications and different conditions," contends W. J. Donovan, director of engineering for Bush Mfg. Co.

"Also, they will be in better position to diagnose operating troubles and should be able to do a better over-all job of installation and service," he told the Michigan State RSES association at its annual convention here.

"Unit coolers, as we know them today, are still in the development stages. I am sure that there are many of you whose refrigeration experience goes back to the period, not so long ago, before standardized, mass-produced unit coolers were generally available.

"Finned heat transfer surfaces were in general use in other industries many years before they were accepted in the refrigeration field. The early commercial refrigeration evaporators were mostly gravity-circulation bare pipe coils, often fabricated on the job. Ammonia, brine, and carbon dioxide were the common refrigerants. In the 1920's, finned coils began to be more generally used, although gravity air circulation was still the standard.

"It wasn't until the 1930's that the unit cooler type of evaporator came into general use. The introduction of the 'Freon' refrigerants made possible the use of non-ferrous tubing and fins. From that time on, the use of the forced draft unit cooler has grown steadily, and today there are available a wide variety of standardized air units to cover almost all of the applications of commercial refrigeration," Donovan said.

Maximum Capacity at Minimum Cost Design Objective

"Turning now to the theoretical side, it is the object of the coil designer to produce a unit with maximum capacity at minimum cost. To better understand the approach, let's first go straight to the fundamental formulas behind the transfer of heat. After a quick look at the fundamentals, we can discuss with better understanding the practical design problems.

Capacity = Surface × "U" × MTD
Capacity = B.tu./hr.
Surface = Sq. ft.
U = B.t.u./hr./sq. ft./°F.
MTD = °F. temperature difference

"Considering each of the factors in the formula, it is obvious that increasing the surface will increase the heat transferred. Also, it is easy to see that increasing the temperature difference between the air and refrigerant will increase the heat transferred.

"However, the temperature difference is limited by other considerations such as humidity control, which we shall discuss later. The only remaining item is therefore the transfer factor 'U'. Calculation of 'U' is an important step in coil design," he said.

$$\frac{1}{U} = \frac{R}{h_i} + \frac{L}{k} + \frac{1}{h_o}$$

U = Transfer factor—B.t.u./hr./sq. ft./°F.
R = Ratio of outside to inside surface.
L/k = Metal resistance
h_i = Refrigerant film transfer coefficient B.t.u./hr./sq. ft./°F.
h_o = Outside air film transfer coefficient

"This formula shows how the transfer factor is affected by three things:

"(a) The refrigerant film resistance

"(b) The air film resistance

"(c) The metal resistance.

"Of these three items, the metal resistance is invariably the smallest and can usually be ignored, especially for copper or aluminum fins. The major resistance to heat transfer is in the thin films of refrigerant and air which form on the inside and outside of the coil surface," Donovan declared.

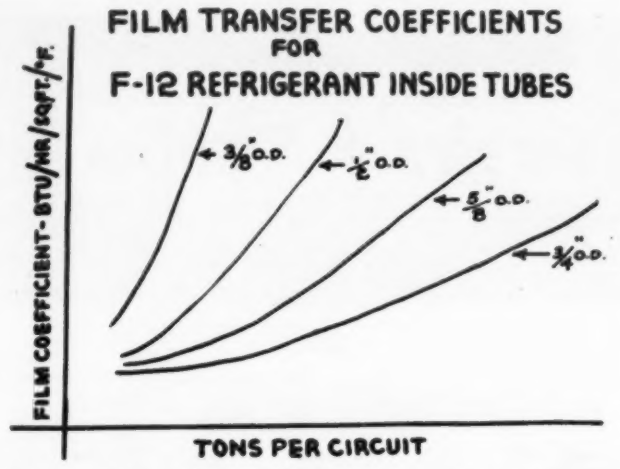

Fig. 1—Higher refrigerant velocity gives greater film transfer coefficient.

"Since we can eliminate the metal resistance as a minor factor, the formula reduces to the following for a forced-draft finned coil:

$$\frac{1}{U} = \frac{R}{h_i} + \frac{1}{h_o}$$

$$\frac{1}{h_o} = \frac{\frac{SHR}{100}}{FV} + C$$

SHR = Sensible heat ratio
FV = Air face velocity

"In general, the way to get the highest possible h_i, h_o, and U factors, is to increase the refrigerant and air velocities to the maximum permissible. However, there are several factors which limit us in this direction, and now that we are armed with the basic formulas, let us consider some of the practical problems involved.

Unit Cooler's Primary Function Is To Cool Air

"Since the primary function of a unit cooler is to cool air, let's first discuss the air side performance. In none of the basic formulas we reviewed did the c.f.m. of air appear. However, the quantity of air is a most important item, and its effect on capacity is felt through its influence on the mean temperature difference or MTD.

"Take for example, a unit cooler designed for 1-ton capacity at 15° temperature difference between room and refrigerant. The c.f.m. of air should be selected to give an air temperature drop of 7° to 8°. We can thus calculate the amount of air required as follows:

$$\frac{12{,}000 \times .85}{7° \times 1.08} = 1{,}400 \text{ c.f.m.}$$

"This figure of 1,400 c.f.m. per ton is a rough but pretty good guide to use in judging the design of a unit cooler which is to be used in a 35° box at 15° TD. For a freezer box, the unit cooler more often is selected at 10° TD. Under these conditions the air temperature drop should be about 4° to 5°, which results in approximately 2,000 c.f.m. per ton.

"To digress for a moment, air conditioning coils are usually designed for about 400 c.f.m. per ton with wide TD's. It is easy to see, therefore, why the coils for a commercial application are larger and more expensive than for an air conditioning job of the same tonnage.

"Knowing the air temperature drop through the coil, the MTD is calculated as in the following example:

Box temperature	=35°
Refrig. temperature	=20°
	15°
Air off coil	=28°
Refrig. temperature	=20°
	8°

$$MTD = \frac{15+8}{2} = 11.5° \text{ F.}$$

"Occasionally you will see coils rated by questionable manufacturers under conditions which are almost physically impossible. The manufacturer's B.t.u/hr. rating can be combined with his air c.f.m. and the air temperature drop through the coil can be easily calculated. If the air temperature drop figures to be 8° or 9°, as is sometimes the case, then rest assured that the coil will never operate at 10° TD.

"In actual operation, the compressor will balance off at a lower suction temperature and the customer will receive less capacity, lower humidity, and higher electric costs," Donovan warned.

Air Velocities

"Air velocities across the unit cooler face are usually between 300 and 500 f.p.m. Higher velocities would give higher heat transfer co-

(Continued on next page)

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EXCESSIVE INVENTORY?

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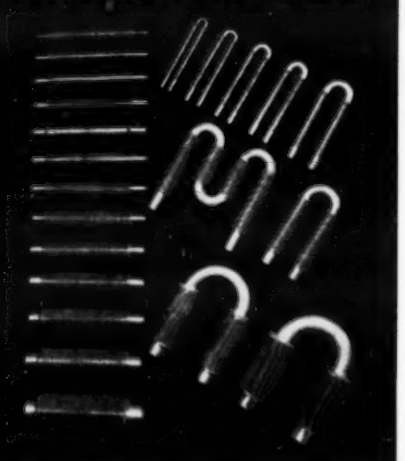

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How To Be Sure Coil Is Right--

(Continued from preceding page)

efficients but would also result in higher fan horsepower. Also, above 500 f.p.m. there is a tendency for moisture to be blown off the finned surface.

"The question often arises—how does the c.f.m. affect the room humidity? For a given B.t.u./hr. capacity, the c.f.m. does not directly affect the humidity too strongly. The major factor which affects the humidity is the TD for which the air unit is selected. Close TD's like 10°, will give a high relative humidity like 85% to 90%. Wider TD's will result in lower humidity.

"What can be done to change the humidity in an existing box which is too moist or too dry? If the box is too dry, little can be done except to make the usual checks to insure that the coil is delivering its maximum capacity. If the box is too moist, it is usually caused by too close TD, or by too much refrigerating capacity with resultant too little running time.

"The TD can be increased on a job already installed by increasing the TX valve superheat or by decreasing the air flow. Both of these will decrease the coil capacity and the result will be more TD and less humidity.

How To Minimize Dehydration

"While it is difficult to vary the quantity of air over too wide a range, it is possible to minimize dehydration by directing the flow of air to best advantage.

"Some unit coolers," he said, "are designed to keep the air off the products as much as possible. Instead the air is directed over the ceiling and walls where it will intercept the incoming heat as directly as possible.

"What can be done along the lines of increasing the outside performance by varying the fin spacing, fin size and fin shape? With respect to fin spacing, the designer has little latitude. The temperature level has a strong practical affect on the fin spacing. For freezer applications, spacings closer than approximately four (4) fins per inch limit the operating time between defrosting," Donovan explained.

"For medium temperature applications in the 35° to 40° range, it is not possible to use much more than six (6) fins per inch with a natural defrost cycle. Only on applications where the refrigerant temperature is above 30° can eight or more fins per inch usually be used.

"The fin size is usually varied with the tube size, which is largely dependent on the tonnage of the unit. Units designed for the small capacity range require small tubes which we shall discuss further later. With small tubes the fins must be proportionately small.

"Fin shape is a subject which has received much attention. It is possible to increase the air side coefficient by the use of spined fins or other arrangements which result in a high degree of air turbulence. The problem here is cleanliness, and it is usually not practical to use more than a few simple spacing fingers to induce air turbulence.

Inside Performance of Coil

"Next, let's look at the inside performance of the coil. Here the basic problem is the same as the outside. A high refrigerant velocity is desirable to give a high inside coefficient as shown in Fig. 1.

"However, this is limited by refrigerant side pressure drop, which goes up as film coefficient goes up. It is desirable to keep the refrigerant pressure drop low because pressure drop means temperature drop and this reduces the coil capacity. In our previous calculation of MTD, we had the following figures:

35°	28°
20°	20°
15°	8°

Av.=11.5°

"This was based on no refrigerant pressure drop. If we had a pressure drop corresponding to 5°, the figures would have been quite different:

35°	28°
25°	20°
10°	8°

Av.=9°

"We would have, therefore, lost about 20% in over-all coil capacity," he pointed out.

"What is the best method of circuiting a coil in order to get the maximum capacity, but still control the pressure drop? A review of some older and some newer methods might be interesting here.

"One of the earliest methods was the float control. This was useful in its day and is still used to advantage, especially in larger systems of the flooded ammonia type. The thermal expansion valve, however, is the standard control today because it is smaller, simpler, and more economical.

"The single series refrigerant circuit is simple and effective up to its limit of pressure drop. With ¾-in. o.d. tubing, ½ ton is about the maximum loading permissible on low temperature forced draft coils operating below 0° suction, and ¾ ton is about maximum for coils operating at 20° to 25° suction.

"The coil which is headered top and bottom was used to a certain extent, principally before the importance of proper circuiting was fully understood. While the pressure drop is low, the arrangement results in too low velocities and the inside coefficient is usually poor. Also, the loading on each circuit is different, resulting in part of the coil not being fully effective.

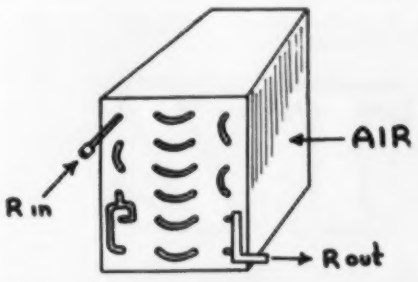

Fig. 2—Split circuit is effective for coils in range in ½ to 2 or 3 tons.

Split Circuit Method

"The split circuit (Fig. 2) is an effective method of circuiting coils in the size range from ½ ton to 2 or 3 tons. The refrigerant flows first through a series circuit until the gas evaporated begins to build up the velocity above a given value. The circuit is then split into two parallel paths, and the result is maximum coefficient within the limits of the allowable pressure drop.

"For larger coils, the pressure-type distributor or TX valve and distributor combined is generally used. The coil designer must select the best circuit length and number of circuits for the operating conditions. Maximum capacity at low temperature is ½ ton per circuit; at medium temperatures, ¾ ton per circuit; at air conditioning temperatures, 1 ton per circuit.

"Having now considered each of the major variables involved in coil design, it is easier to appreciate the over-all problem in coil design. Using the basic formulas, the c.f.m., the surface and the circuiting can all be selected to deliver a certain B.t.u./hr. at a given TD. The designer must do a certain amount of juggling and must compromise here and there to come up with the best over-all unit.

"Now, armed with the theoretical information we have just reviewed, you might ask how can we check a coil that is already installed to determine if it was properly designed. This would be difficult and would probably not be an entirely satisfactory calculation.

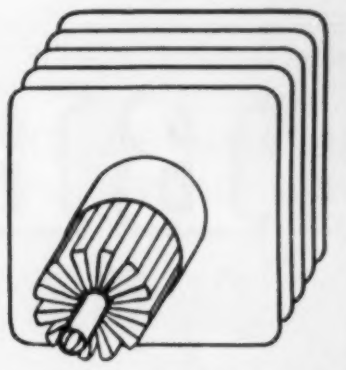

Fig 3—Internal fin greatly increases internal coil surface.

Problem of Checking Coil Already Installed

"It is, of course, best to purchase a coil in the first place only from a responsible manufacturer who has complete data in his catalog on the coil surface, amount of air, B.t.u./hr. rating and other factors. However, let us assume you are confronted with a requirement to straighten out a job already installed which is not performing. Assume the air unit is of unknown make.

"First let's assume that you have checked over the mechanical operation of the system and all is in good order. Also, let us assume you have made all necessary adjustments to the controls and that the cut-in and cut-out points are correct and most important that the TX valve is feeding properly and its superheat setting is right.

"If there is any question on valve performance you have opened up the valve just enough to flood out of the unit and then closed it down a bit to insure that there is some superheat but not too much," Donovan suggested.

(Concluded on next page)

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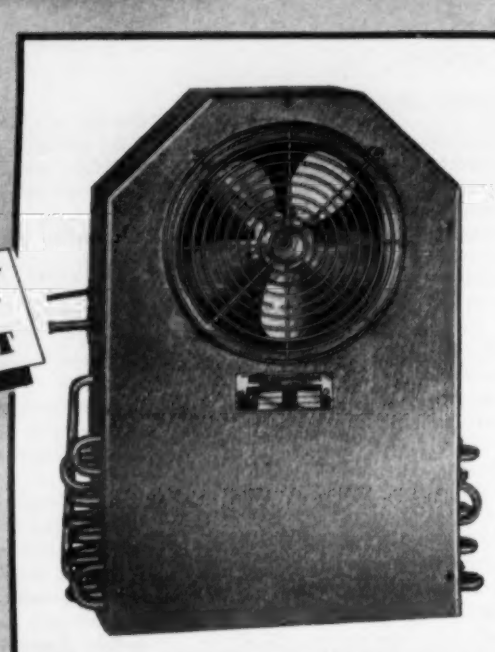

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How Serviceman Can Use Basic Knowledge To Check Coils--

(Concluded from preceding page)

"The next thing to do is to calculate the box heat load by the standard methods available. Make sure next that the compressor has the required capacity at the proper suction temperature. Now, knowing the B.t.u./hr. capacity required from the air unit, and knowing also the TD at which it should operate, you can calculate easily the c.f.m. of air required.

"To check the actual c.f.m. being delivered, a survey of the unit outlet velocities can be made, and if you have an air instrument, or a survey of the air outlet temperatures can be made and averaged. Working backwards will often give you a clue as to whether or not the air flow is sufficient. If the air flow is low and the face velocity permits, a new fan and motor will sometimes provide the necessary increase.

Check Refrigerant Loading Per Circuit

"Then check the refrigerant loading per circuit, and if there is any question in your mind, install a pressure tap between the TX valve outlet and coil inlet and one at the coil outlet. Tie these taps to the same gauge through a manifold and check the coil pressure drop during normal operation. Pressure drop more than a pound or two is a pretty good indication of an undersized unit or an improperly circuited unit.

"If air c.f.m. and refrigerant pressure drop are within reason, then there is little else you can do. The unit is probably deficient in surface or the over-all transfer coefficient is low because of improper design. A few simple checks such as outlined above, however, will often confirm your conclusions on capacity trouble and will enable you to recommend whatever removals are necessary with more confidence.

"It might be interesting also to look a bit into the future to see what might be in store. As was mentioned before, it does not appear that more than small improvements are possible on the outside of the coil. On the inside, however, there is more hope.

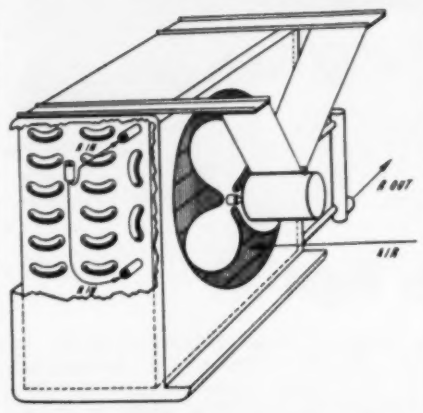

Fig. 4—Standard type unit cooler for a particular application may require five rows. Compare with Fig. 5.

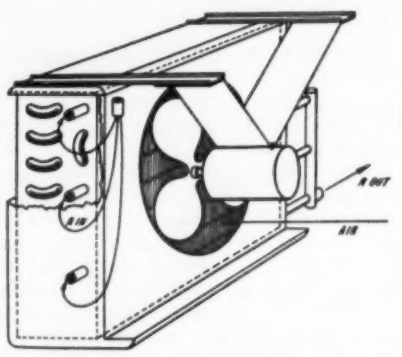

Fig. 5—Unit cooler equipped with internal fins is only three rows deep.

"Fig. 3 shows the construction of an internal fin that will enable us to greatly increase the internal coil surface. Let's compare the possible inner-fin performance with a standard coil without inner fins.

"Table 1 shows by calculation that without inner-fins the unit cooler core for the given conditions would have to be five (5) rows deep. Fig. 4 shows the general arrangement of the unit and the depth of the core.

"We now see from the calculation in Table 2 that the inner-finned surface allows the coil to be reduced in depth from five rows to three. This not only results in smaller unit dimensions (Fig. 5) but also reduces the fan static pressure and allows the use of a smaller motor for the same air," Donovan declared.

Table 1—Calculation of Standard Unit Cooler

Design conditions:
Air flow—1,600 c.f.m.
Box temp. 35° F.
Refrigerant suction temp. 20° F.
Load—12,750 B.t.u./hr.

Use "C" fin (2" x 2") on ¾" o.d. tube, 6 fins/in. with face velocity of

$$500 \text{ f.p.m.},\ h_o = \frac{FV}{100} + C = 6.4$$

$$\frac{1}{U} = \frac{R}{h_i} + \frac{SHR}{h_o} =$$

$$\frac{20.2}{116} + \frac{.85}{6.4} = 0.307$$

U = 3.26 LMTD = 10.8 F

$$\text{Number of rows deep} = \frac{12{,}750}{3.26 \times 10.8 \times 3.20 \times 22.5} = 5.03 \text{ rows}$$

Table 2—Calculation of Inner-Fin Unit Cooler

Design conditions:
Air flow—1,600 c.f.m.
Box temp. 35° F.
Refrigerant suction temp. 20° F.
Load—12,750 B.t.u./hr.

Use "C" fin (2" x 2") on ¾" o.d. tube with inner fin. 6 fins/in. with face velocity of

$$500 \text{ f.p.m.},\ h_o = \frac{FV}{.100} + C = 6.4$$

$$\frac{1}{U} = \frac{R}{h_i} + \frac{SHR}{h_o} =$$

$$\frac{3.86}{122} + \frac{.85}{6.4} = 0.164$$

U = 6.10 LMTD = 10.3° F.

$$\text{Number of rows deep} = \frac{12{,}750}{6.10 \times 10.3 \times 3.19 \times 22.5} = 2.82 \text{ rows}$$

French Refrigeration Specialists Examine American Organization, Administration, and Work Methods

WASHINGTON, D. C.—Organization, administration, work methods, and other factors responsible for high productivity in the American refrigerating equipment industry are being examined first-hand by French refrigeration specialists.

Sponsored by the Mutual Security Agency's productivity and technical assistance program, at the request of the French National Productivity Committee, the study is designed to promote increased production of refrigerating equipment in France.

Increased production of more efficient, low-cost refrigerating equipment, the productivity committee has pointed out, is expected to lead to better food storage and distribution methods by agricultural cooperatives, food wholesalers, and retailers.

The French, who arrived in the United States on April 22, will make a survey of manufacturing techniques in the American refrigeration equipment industry.

Following their arrival in New York City, the French have conferred with representatives of the American Society of Refrigerating Engineers, American Standards Association, Inc., and the American Federation of Labor.

They have also visited General Electric Co., Erie, Pa.; Carrier Corp., Syracuse, N. Y.; Fedders-Quigan Corp., Buffalo; Tecumseh Products Co., Tecumseh, Mich.; Kelvinator Div., Nash-Kelvinator Corp., Detroit; and Detroit Ice Machine Co.

Their itinerary was scheduled to continue as follows:

May 11, Howe Ice Machine Co., Chicago; May 12, UAW-CIO; May 13, National Association of Practical Refrigerating Engineers; May 14, Airtemp Div., Chrysler Corp., Dayton; Frigidaire Div., General Motors Corp., Dayton.

May 18-22, joint meeting with Evansville Chamber of Commerce and Committee of 100, Inc., and visits to various plants in the Evansville area including Servel, Coldspot Div. of Sunbeam Corp., and International Harvester Co.

May 25, Frick Co., Waynesboro, Pa.; May 26, Refrigeration Equipment Manufacturers Association, Washington, D. C.; May 27-29, meetings with various agencies in Washington.

Jean Koch, engineer, Ets. Quiri & Co., Strasbourg, is the team leader.

Other members of the team are: Marcel Babey, manager, Charles Forget, worker, and Camille-Henri Gautret, skilled worker, all of Ets. Brissonneau & Lotz, Nantes; Raymond G. Carrier, worker, and Jacques Protard, sales manager, both of Co. Industrielle des Procedes R. Pictet, Paris; Robert Garrigues, worker, and Pierre M. Malhaire, assistant head of refrigeration department, both Ste. des Usines Chausson, Asnieres; Emile H. Hauw, foreman, and Pierre Le-Clere, engineer, both of Ateliers & Chantiers de la Loire, Paris; Paul Jubert, engineer, Ste. Neve, Paris; Georges M. Presente, consulting engineer, Paris, and Frederic Steyer, worker, Ets. Quiri & Co., Strasbourg.

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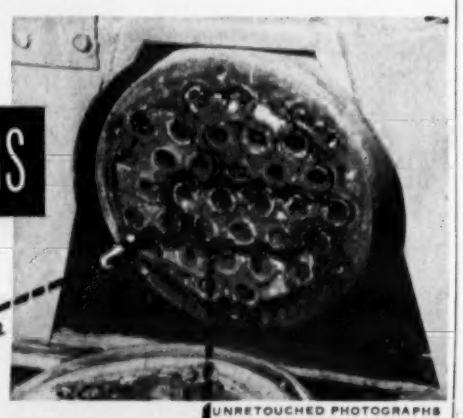

UNRETOUCHED PHOTOGRAPHS

The Broadway Market, in Redwood City (Calif.), is but one of many hundreds of amazing EVIS installations. All over the United States EVIS Water Conditioners are conquering scale in practically all types of refrigeration equipment. The top photograph was made at the time the Evis was installed . . . a quarter-inch rod was driven through the tubes . . . two weeks later much of the scale was sufficiently soft to be prodded out with a small diameter tube . . . the condenser was not opened again for six months . . . the bottom photograph clearly shows what the EVIS had accomplished.

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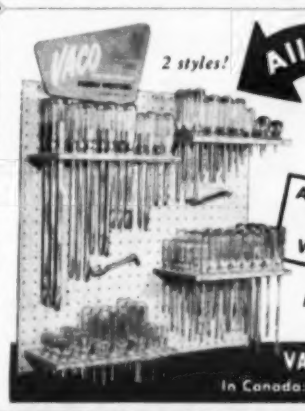

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2-Door 32-Cu. Ft. Freezer Stores Half Ton of Food

——KEY NO C-530——

KENDALLVILLE, Ind. — A 32-cu. ft. upright home freezer that will hold more than a half ton of food and can operate at a temperature of -28° F. has been introduced recently by the McCray Refrigerator Co., Inc. here.

The new "Twin-Door" is a companion model of the 20-cu. ft. upright announced several weeks ago as McCray's first entry in the home freezer field.

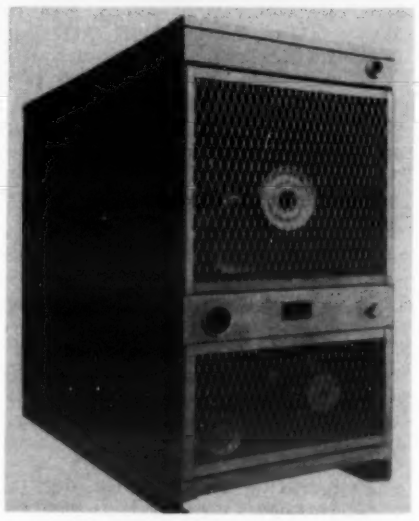
Featured on the Twin-Door 32 is a deep well storage bin in the bottom of the freezer with a freezing space of more than 4 cu. ft. With the 4 cu. ft. of space above the well, the freezer provides a total of more than 8 cu. ft. of bulk package freezing area, the company says.

The freezer has four "Koldflo" freezing shelves which circulate refrigerated air to all parts of the interior. In addition, a conventional center shelf can be removed for large package freezing.

The finish of the freezer, both inside and out, is high baked white enamel. Hardware is chrome plated. Doors open full so that there is no corner-hidden food. Models will be available with green tinted door liners and interiors.

The 32-cu. ft. freezer is 57⅞ in. wide, 29⅞ in. deep, and 69⅞ in. high. Net weight is 700 lbs.

Packaged Cooling Tower Has Parts Accessible



——KEY NO. C-531——

LITTLE ROCK, Ark.—A completely packaged cooling tower designed for the residential as well as commercial market has been announced by Peerless Sales here.

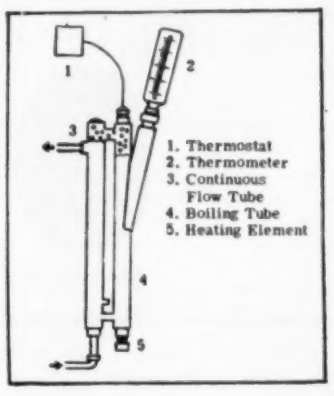
Called the "Aqua-Saver," the tower is made in eight models ranging in nominal capacity from 3 to 30 tons, depending on air and water temperatures and flow rate.

The package includes pump, pump motor, fan, and drives. Fan blades are deep pitched for quiet operation. Single motor, drives, pump, and fan are all accessible from one end and have no overhead piping or side piping.

A totally enclosed distribution basin prevents accumulation of leaves and other obstructing materials.

The unit is fabricated from 14-gauge sheet steel and is completely electric welded. The all heart redwood decking is removable by removing the end grille.

Other features include a totally enclosed water-proofed fan bearing, bleed-off valve to remove salts from the cold water basin, and an adjustable float valve.



Liquid Absorbent Controls Air Conditioning Humidity

——KEY NO. C-532——

NEW YORK CITY — Niagara Blower Co. has announced a new means for accurately controlling the moisture content of relative humidity in air conditioning without the need for a moisture-sensitive element to determine humidity.

The new instrument is applied to the company's method of air conditioning in which air is dehumidified directly by a liquid absorbent.

As the air conditioner removes moisture from the air stream passing through it, the absorbent liquid becomes diluted, and is continuously reconcentrated to keep it effective.

The amount of moisture to be permitted in the conditioned air is governed by the concentration of the absorbent liquid. This concentration has a direct relation to the boiling point of the mixture of absorbent liquid and water.

Using this principle, the new instrument consists essentially of a tube equipped with a heating element. A "sample" of the liquid, taken after it is reconcentrated on its return flow to the air conditioner, continuously enters this tube and is heated to the boiling point.

A thermostat, with its sensing element in the tube, is set at the boiling point desired. The thermostat operates the concentrator unit to furnish a greater or less concentration of the absorbent liquid, as called for by the thermostat setting.

Since a change of several degrees in the boiling point of the absorbent liquid is required to effect a change of 1% in its concentration, the control is extremely accurate and results in the holding of the relative humidity of the conditioned air to close tolerances with a simple, dependable instrument not subject to change in moisture-sensitivity.

Reversible Circulator Acts As Exhaust or Intake Fan

——KEY NO C-533——

WICHITA, Kans.—A reversible air circulator that rotates 180° and acts as either an intake or an exhaust window fan has been introduced by the O. A. Sutton Corp. here.

Called the Vornado "Turn-About," the fan has the patented Vornado twin air injector cones, streamlined propellor cowling, and deep-pitched propeller blades.

Easy to install, it will not mar the window sill or casing. The window can be closed during inclement weather without moving the fan or disturbing the drapes or curtains.

The fan has multiple speeds to produce a variety of cooling effects, is quiet in operation.

12-In Water Cooler Can Handle 3-Size Bottles

——KEY NO. C-534——

CHICAGO—An electrically refrigerated bottle-type water cooler that is only 12 in. wide by 19 in. deep is the "Cooler Cub" model, made by Remcor Corp. here.

It may be used with 1, 2, or 5-gal. bottle, a new type water bottle gasket of molded rubber fitting up snugly on any of three bottles.

Water tank cooling coil consists of copper tubing refrigeration coils wound and soldered to outside of cooling tank, which is cork insulated. Tank can be drained completely through faucet. The hermetic condensing unit has an extra large finned condenser.

One piece wrap-around cabinet fits over strong welded angle iron frame. Cabinet may be quickly removed from frame by unscrewing water faucet and removing four screws in the back. Waste receptacle lifts off for waste water removal.

Another FIRST from the Originators

The Hit of the N.Y. Frozen Food Exposition!

Beautiful Gleaming Stainless Steel

ICE CUBE MAKER and COMB. BEVERAGE COOLER

with Built-In Water Station!

Deluxe Model especially designed for Night Clubs, Taverns and other Businesses

Model 1-6SC-D—Equipped with shelf that can be converted from a drip pan to a Frost Glass Chiller by moving to lower brackets. Built-in Water Station for cold water. Roto Polythylene or "ease-out" aluminum Trays make over 150 lbs. of ice cubes and dry cools 2000 12 oz. bottles daily. 3-Inch insulation. Remote type or self contained. 4-5-6-7-8 Ft. Sizes, 27" W, 39" H. With radius corners.

Exclusive Franchise available to dealers and distributors.

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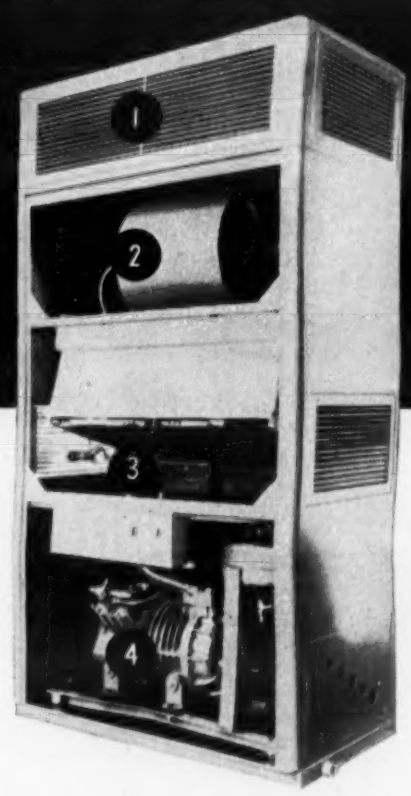
AIR CONDITIONING UNITS HAVE TO BE RELIABLE . . .

Every time you recommend an air conditioning unit, you lay your reputation on the line. The unit has to meet the requirements of the job in each and every case. With BAKERAIRE, constant, accurate output is assured by balanced functioning of all parts.



1. Plenum diffuses air in any direction by simple adjustment of louvres.
2. Slow speed, full air capacity of the Fan Section balances with
3. The Coil Section, in which a 5 row coil has ample surface to remove moisture and heat, balanced with
4. The quiet efficient Compressor Section where the controls are integrated for automatic operation and complete safety protection. For final protection the interlock relay prevents short cycling of the compressor unit.

These features cut installation and maintenance time costs:

All water connections are run to an external utility panel, eliminating inconvenient internal connections

All electrical connections are integrated in one panel in front of the unit

All functional parts are easily accessible through the removable panels

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365 W. Wyoming Ave., Phila. 40, Pa.

Refrigeration Problems

and their solution

by Paul Reed

For Service and Installation Engineers

Paul Reed

A Two-Stage Ethane-'Freon-22' Freezer System (2)

The reader's query mentions a zero gauge section pressure for the "Freon-22." This corresponds to -41.4° as the temperature of the evaporator portion of the interstage evaporator-condenser. Thus, the condensing temperature of the ethane should be about -30° F., allowing 11.4° for the temperature difference in the interstage.

Minus 30° corresponds to an ethane pressure of approximately 134.5 pounds per square inch absolute (p.s.i.a.). Zero gauge is 14.7 absolute, so the ratio of compression that you propose for the ethane stage is about 9.1 to 1 (134.5 ÷ 14.7) which is within good practice of not exceeding 10 to 1 in the low temperature stage, and preferably not in the second stage.

With a -90° evaporator, the ethane pressure would be 39.3 p.s.i.a., so the ratio of compression with -30° condensing and -90° evaporator, would be 3.4 to 1 (134.5 ÷ 39.3).

KEEP COMPRESSION RATIOS UNDER 10 TO 1

To get the -30° condensing for the ethane, the "Freon-22" suction pressure was zero gauge or 14.7 p.s.i.a. If, as specified, you use an air-cooled "Freon-22" unit, you should figure on a room temperature of about 100° in a factory in your area.

A 100° room means a condensing temperature of not less than 130°, which corresponds to a "Freon-22" condensing pressure of 313.5 p.s.i.a. Thus, the ratio of compression would be 21 to 1 (313.5 ÷ 14.7) which is far in excess of good practice and would result in low capacity and poor efficiency.

To reduce this compression ratio, you can either:

1. Lower the condensing temperature by using a water-cooled condenser. (Preferably, with a water-cooled compressor head, also). If you could run with a 90° condensing temperature, the "Freon-22" head pressure would be 184.8 p.s.i.a., so the compression ratio would drop to 12.5 to 1 (184.8 ÷ 14.7). This is still a little high.

2. Raise the suction pressure. To get the compression ratio for the "Freon-22" stage within 10 to 1, the suction pressure would have to be at least 18.5 p.s.i.a. (184.8 ÷ 10) or 3.8 p.s.i.g., which corresponds to an evaporator temperature of about -32°.

This would make the "Freon-22" portion of the interstage -32°. If, as before, we allow 11° temperature difference in the interstage, the condensing temperature of the ethane would become -21°, so the ethane head pressure would become 157.0 p.s.i.a.

This would increase the compression ratio for the ethane stage (assuming a -90° evaporator) to 4.0 to 1 (157.0 ÷ 39.3). This would decrease the efficiency and capacity of the ethane compressor, which would therefore have to have a slightly larger displacement in order to get the required capacity.

A BETTER BALANCE

Theoretically, you would select interstage temperatures and pressures so that the compression ratios of the two stages would be about the same. With a -90° ethane evaporator, and a 90° "Freon-22" condensing, this would call for an ethane condensing temperature of about 2°, which makes both compression ratios approximately 5.7 to 1.

In practice, losses "pile up" faster on the low temperature stage, so it is usually better to use a somewhat smaller compression ratio on the low temperature stage. The equipment itself and the displacement that can be obtained, and, of course, the condensing temperature that must be used on the second stage, will influence the selection of interstage temperatures and compression ratios.

In this case, a compression ratio of 5.15 to 1 on the ethane stage and 6.75 to 1 on the "Freon-22" stage would work out about right. This would result in the following temperatures, pressures, and compression ratios:

Ethane stage

Evaporator Temperature -90°
Suction Pressure 39.3 p.s.i.a., 24.6 p.s.i.g.
Condensing Temperature -5°
Condensing Pressure 202.8 p.s.i.a., 118.1 p.s.i.g.
Compression Ratio 5.15 to 1

"Freon-22" stage

Evaporative Temperature -16°
Suction Pressure 27.4 p.s.i.a., 12.7 p.s.i.g.
Condensing Temperature 90°
Condensing Pressure 184.8 p.s.i.a., 170.1 p.s.i.g.
Compression Ratio 6.75 to 1

IF AIR-COOLED, USE 'FREON-12'

If conditions are such that a water-cooled condenser cannot be used for the second stage, it would be better to use "Freon-12" instead of "Freon-22." With a -16° evaporator, the "Freon-12" suction pressure would still be above the zero gauge, so that it would not have to run on a vacuum. This would still be true if the TD of the interstage had to be as high as 15° instead of 11°.

At 130° condensing, the "Freon-22" condensing pressure is rather high (299 p.s.i.g.)—high enough to cause some trouble with leaks, etc. Also, such high condensing temperatures increase the possibility of oil decomposition and excessive acidity, and their effects of sludge and other solids to clog screens and cause operational difficulties.

At 130° condensing, the condensing pressure for "Freon-12" is 180 p.s.i.g. With a -16° evaporator, the ratio of compression for the second stage using "Freon-12" and air cooled, would be 11.7 to 1; rather high, but the discharge temperature would be lower than for "Freon-22" under the same conditions.

MAXIMUM PRESSURES AND MOTOR SIZING

So design the ethane stage as to hold the ethane charge to a minimum and thus avoid excessive pressures during shut-down. In fact, an expansion chamber should be provided, which allows superheating above about 20°, so that the maximum pressure of the ethane will not exceed about 300 p.s.i.g.

Be generous in oversizing the motor driving the ethane compressor—at least twice the horsepower required for normal operation. It has to carry a very heavy overload on the pull-down from a warm cabinet.

A suction pressure regulating valve set for about 30 p.s.i.g. can be helpful in preventing motor overload on warm pull-down, although it will slow up the pull-down time somewhat.

The controls should be interlocked so that the "Freon" stage starts first and pulls down almost to normal running temperature before the ethane stage starts.

Fogel Sales Meeting To Be Staged In Macon May 25

MACON, Ga.—A Fogel commercial refrigeration sales meeting will be held at Hotel Dempsey here on May 25 under sponsorship of Hugh H. Hill, distributor, and Fogel Refrigerator Co., it has been announced.

Dinner will be served from 6 to 7 p.m. and the sales conference will be held from 7 to 9:30 p.m.

From 2 to 5 p.m. on the same day, an open house will be held at the distributor's showroom 3215 Vineville Ave. A cocktail hour will follow.

Two Alabama Hotels Now Completely Air Conditioned

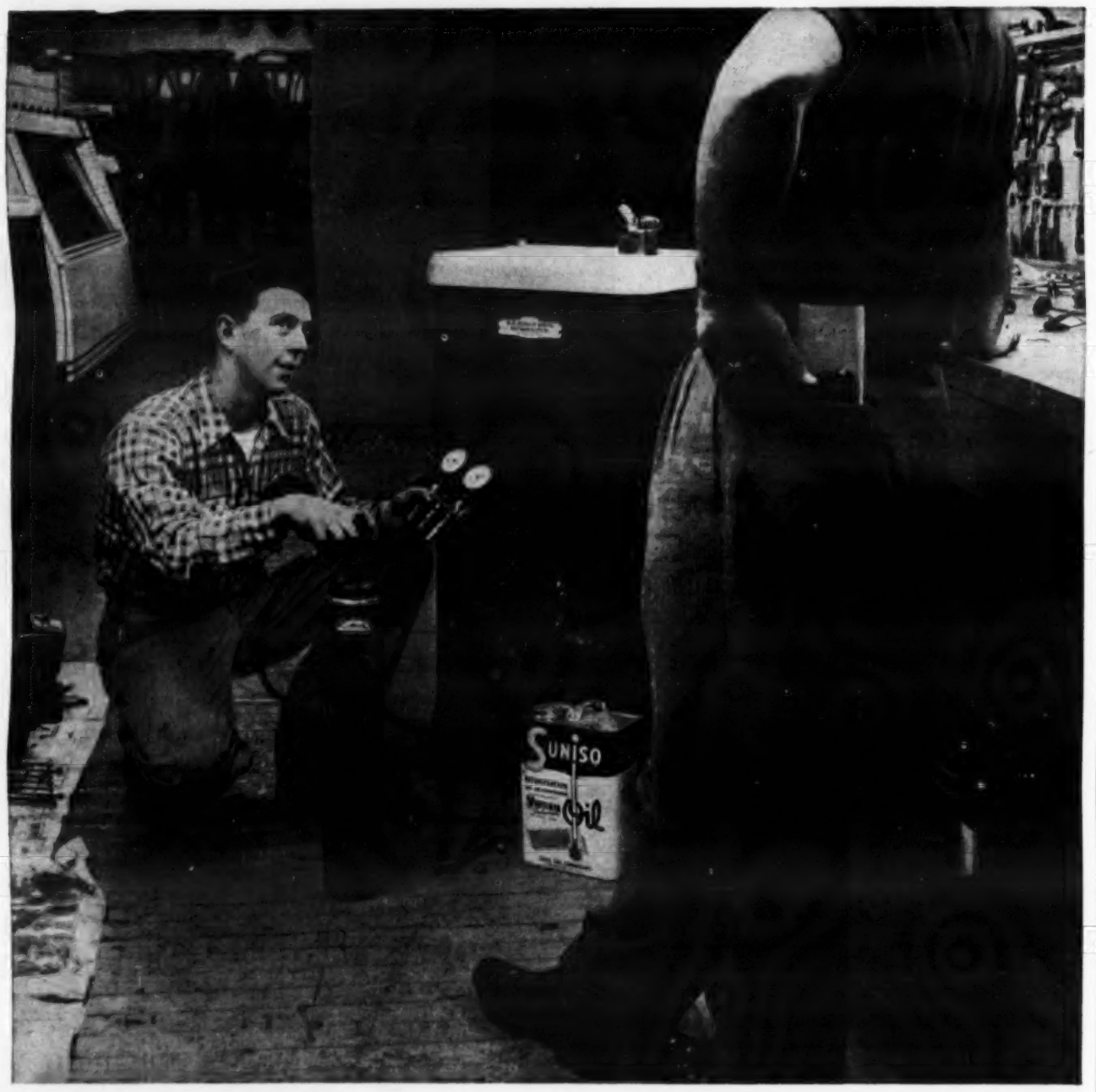
BIRMINGHAM, Ala.—Two leading Alabama hotels have hung out "100 Percent Air Conditioned" signs.

They are the Tutwiler hotel, Birmingham, and Jefferson Davis hotel, Montgomery, both units in the Dinkler chain.

While the Tutwiler and Jefferson Davis have had air conditioned rooms, only now can they boast of complete air conditioning. Contracts were handled by Shook & Fletcher Supply Co., Carrier distributor.

CAN YOU USE A REPRESENTATIVE IN SOUTHERN CALIFORNIA?

I am now available as representative or agent for manufacturer supplying the refrigeration, air conditioning or heating trades. Twenty years in the wholesale end of the industry. Write Huntington Small, 1811 Whitley Ave., Hollywood 28, Calif.



"We never get any call-backs"

Stuck valves, dirty strainers, corroded lines, sludging, plating, carbon—all things which can make a refrigeration system inoperative—are caused basically by poor quality refrigerants or refrigeration oils. That's why servicemen insist on "Virginia" refrigeration products. "Virginia" quality products like these enable them to fill a refrigeration system and forget it:

V-METH-L—"Virginia" Methyl Chloride. Made especially for refrigeration use, with an extremely low moisture content, low acidity and narrow boiling range.

EXTRA DRY ESOTOO. The refrigeration grade SO_2 that servicemen have relied on for the last 20 years. Each cylinder is triple tested for dirt, moisture and oil to maintain its reputation for fine quality.

KINETIC CHEMICAL'S "FREONS." Distributed by "Virginia." A complete line of these fine refrigerants is available in cylinder form. Two of them, "Freon-12" and "Freon-114," are available in Can-O-Gas, the handy, throw-away, no-deposit can.

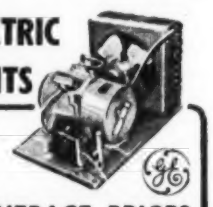
SUNISO OILS. Distributed by "Virginia" and made expressly for refrigeration use. Suniso Oils won't wax out, sludge or form carbon; eliminate freeze-ups and corrosion. In refinery-filled, refinery-sealed containers.

Your wholesaler undoubtedly has all these fine quality refrigeration products. Or write **VIRGINIA SMELTING Co., Dept. 63, West Norfolk, Va.**

VIRGINIA *Refrigerants*

ESOTOO • V-METH-L • KINETIC CHEMICAL'S "FREONS"
CAN-O-GAS • PERMAGUM • PRESSTITE TAPE
SOLVEX PRODUCTS • SUNISO REFRIGERATION OILS

GENERAL ELECTRIC HERMETIC UNITS



with Valves
AT *SPECIAL*
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BRAND NEW IN ORIGINAL CONTAINERS

Partial List of Models

¼ H.P.	SA6AL1	Low Temp. Less Rec.
¼ H.P.	SA6AM1	Low Temp. Less Rec.
¼ H.P.	SA4AL1	Low Temp. Less Rec.
⅓ H.P.	SA3AL1	Low Temp. Less Rec.
⅓ H.P.	SA3AM1	Low Temp. Less Rec.

REPLACEMENT MOTOR COMPRESSOR ASSEMBLIES ALSO AVAILABLE

CS6 Line	⅛ H.P.
CS4 Line	¼ H.P.
CS3 Line	⅓ H.P.

Send for complete list of models and our special low prices.
Manufacturer inquiries invited for additional quantity discounts.

MANN REFRIGERATION SUPPLY CO.
440 LAFAYETTE STREET, NEW YORK, N. Y.

BULLETIN 709
Size 2, Bulletin 709 across-the-line solenoid starter with cover removed.

TROUBLE-FREE

Across-the-Line Starters

The Bulletin 709 solenoid starter is a favorite for air conditioning and refrigeration because it is good for millions of operations and does its job day in and day out without attention. The double break, silver alloy contacts never require maintenance. There is only one moving part—no trouble-making pins, pivots, hinges, or flexible conductors. Write for information.

ALLEN-BRADLEY COMPANY
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QUALITY
SOLENOID MOTOR CONTROL

2 Argentinian Architects Win Carrier Contest for Year-Round Home Design

SYRACUSE, N. Y.—Two Argentinian architects on temporary teaching assignments at North Carolina State college took top national honors and $5,000 in prize money in the Carrier Weathermaker Home Competition, it was announced by Edgar I. Williams, FAIA and chairman of a panel of judges.

Purpose of the competition was "to stimulate the design of year-round air conditioned homes in the moderate price bracket."

In the opinion of the judges the plan for a flat-roofed, one-story, five-room house submitted by Professors Eduardo Fernando Catalano and Horacio Caminos of the staff of the School of Design of the North Carolina college was the best of 855 entries submitted by architects, architectural draftsmen, and students from all over the country.

The competition was the first national architectural one ever held in which year-round air conditioning was a requirement. The competition was sponsored by Carrier Corp. which offered $27,800 in cash awards to interest architects and builders in homes designed especially to meet the requirements of the recognized trend toward year-round air conditioning of dwellings.

Three leading architects, a builder, and a housewife made up the panel of judges. Architects were Edgar I. Williams, New York City; Pietro Bolluschi, dean of Massachusetts Institute of Technology's School of Architecture; and Richard J. Neutra, Los Angeles.

Edward G. Haeger, director of research and technical services of the National Association of Home Builders, was the building consultant. Mrs. Lillian M. Gilbreth, industrial engineer, whose life was amusingly described in the best seller, "Cheaper by the Dozen," was the housewife.

Area grand prize winners for homes 1,000 sq. ft. and under each received $2,000. They were Richard J. Dimit, Cambridge, Mass., east and northeast; Larry Mallard and James L. Bennett, Greensboro, N. C., south and southwest; and Joseph Burnett, Chicago, central and northwest.

Winners of area grand prizes of $2,000 each for houses in the 1,000 to 1,800 sq. ft. class were Abraham Geller and William Cox, 331 E. 23rd St., New York City, east and northeast; A. L. Aydelott, Memphis, Tenn., south and southwest; and Tom Bear, St. Louis, central and northwest.

There were 25 lesser prizes awarded for various types of modern homes, all featuring year-round air conditioning. Awards were made on a sectional basis in the two classes for homes of flat and pitched roof design.

Williams, chairman of the panel of judges, said "the tremendous interest in this contest for homes designed around air conditioning is unprecedented in architectural competition.

"It is proof indeed that general acceptance of residential air conditioning is pointing toward new designs and new adventures in home living comfort. Air conditioning of homes, contestants have proven by their designs, have made hitherto impractical innovations possible for small homes of moderate costs."

Cloud Wampler, president of Carrier, predicts a great boom in the residential air conditioning business.

"More than 60% of the homes to be built in this country within the next six years will be completely air conditioned," he said.

He pointed out that year-round Carrier air conditioned homes can now be purchased for as low as $7,500.

Chase Heads Advertising, Promotion for Fedders

BUFFALO—William H. Chase has been appointed advertising and sales promotion manager of Fedders-Quigan Corp., according to A. J. DeFino, general manager.

W. H. Chase

He succeeds Robert E. Cassatt, who recently was promoted to sales manager of the Refrigeration Appliances Div.

Chase formerly was associated with Bendix Home Appliances Div. of Avco Mfg. Corp., where he served as assistant to the director of advertising, merchandising, and sales promotion.

Previously, Chase had been associated with Rudolph Wurlitzer Co. of North Tonowanda, N. Y., in various capacities, including assistant to advertising manager, regional sales manager, and advertising manager.

Servel Employe Awarded $2,300 for Suggestion To Change Test Box Insulation

EVANSVILLE, Ind. — The largest award ever made by Servel, Inc. under its suggestion system was given recently to Hugh Austin of Evansville.

He received $2,300 for his proposal to substitute a new insulating material for the plywood previously used in building "hot room" calorimetric test boxes.

At the time Austin submitted his suggestion, he was a time-study engineer. He has since been promoted to unit time-study supervisor. He has been with the company for 19 years.

In the 18 years since the employe suggestion system was started, Servel has paid out more than $108,000 in awards for more than 3,800 acceptible ideas.

Van Dyke Retires from Frigidaire Dayton Post

DAYTON—R. D. Van Dyke, manager of the Dayton sales branch of Frigidaire Sales Corp. since 1936, is retiring May 31 after more than 25 years' service with Frigidaire.

He will be succeeded by L. W. Smith, manager of appliance product sales for Frigidaire Div., General Motors Corp., it was announced by H. F. Lehman, Frigidaire general sales manager. Smith has been connected with Frigidaire since 1928.

The Dayton sales branch, located in a new building at 3555 Kettering Blvd., serves some 275 dealers in southern Ohio, northern Kentucky, and part of Indiana.

Van Dyke joined Frigidaire in the educational department in 1927. He became branch manager in Providence, R. I., in 1929, and southwest region manager in 1932. He was made assistant sales manager for commercial and air conditioning products at the factory in 1934.

Smith joined the Frigidaire Philadelphia district office in 1928. He came to Dayton in 1936 as a member of the marketing department. Later he served two years in the G. M. public relations office in New York. Prior to becoming manager of Frigidaire appliance product sales, Smith was manager of marketing.

To Cool New 'Phone Bldg.

SUMTER, S. C.—Work has begun on a new $142,219 air conditioned building for Sumter Telephone Co.

Restaurant Show--

(Concluded from Page 1, Column 5)

customers to its door in selling its outstanding item."

For the benefit of restaurant equipment dealers, Vollmer pointed out that "lack of proper knowledge and use of fine equipment has frequently nullified the labor saving.

"Conversely, training without labor-saving equipment will not produce maximum labor-saving economies.

"We need better dish machines, better pot washers, better types of chinaware that will reduce our breakage, better ovens, and better refrigeration equipment at more economical prices."

The show itself, which occupied both wings of the Navy Pier, set records in number of exhibitors and attendance. There were numerous manufacturers of refrigeration equipment present, in addition to those exhibitors whose lines include refrigerated items.

Some air conditioners were also on display.

Restaurant operators and equipment dealers at the show also seemed quite interested in self-contained ice-making units, several models of which were featured by nine manufacturers.

High interest was shown likewise in new models of soda fountains, ice cream freezers, reach-ins for both normal temperature and frozen foods, restaurant display cases, and similar items.

Mart Elected President of Cooling Tower Institute

SAN FRANCISCO—Leon T. Mart, president of The Marley Co. of Kansas City, Mo., was elected president of the Cooling Tower Institute at the recent annual meeting.

Other officers elected for the 1953 term were Neal B. LauBach of Hudson Engineering Corp. of Houston, vice president; Paul R. Hoffmann of Lilie-Hoffmann Cooling Towers of St. Louis, secretary; Clayton E. Pickup of The Fluor Corp., Los Angeles, treasurer.

Executive offices of the institute at Palo Alto, Calif., continue under the direction of Raymond C. Kelly, executive manager.

Member companies, all major manufacturers of industrial water conservation equipment, are Foster Wheeler Corp. of New York City; J. F. Pritchard & Co., Kansas City, Mo.; United Cooling Tower Co., Kansas City, Mo.; Water Cooling Equipment Co., St. Louis; and C. H. Wheeler Mfg. Co., Philadelphia, in addition to those firms represented by the new officers.

Expanded programs of technical field studies were approved by the board of directors at the San Francisco meeting. Working in cooperation with the California Redwood Association, the U. S. Forest Products Laboratory, and the Institute of Paper Chemistry, the institute this year will complete some of its comprehensive field studies for the improvement of water conservation equipment.

"This new research work is pioneering in a branch of technology which has been inadequately treated in the engineering field in years past," Kelly said. Twenty selected cooling tower users are contributing their plant facilities for the institute studies. Field work is under the supervision of the Cooling Tower Institute field engineer James L. Willa, based at Houston, Texas.

Heads Ontario ASHVE

TORONTO, Ont., Can.—Norton W. Kingsland of Toronto has been elected president of the Ontario Chapter of the American Society of Heating & Ventilating Engineers.

Distributor Becomes Chamber of Commerce President

Austin J. Curry, vice president, Electric Products, Inc., recently became president of the East Liberty (Pa.) Chamber of Commerce. Curry is seated, (left), alongside retiring president, Robert G. Gunn.

Electric Products, Inc. distributes Hussmann refrigerators, coolers, and cases, York refrigerator equipment and air conditioning, Annheuser-Busch cabinets, and Ebco water coolers.

Machine for Cold Testing Developed by Sub-Zero

CINCINNATI—A low temperature chilling machine designed especially for cold testing has been announced by Sub-Zero Products Co. here.

Designated the "Sub-Zero Test Chamber," the new unit is available in sizes from 1.5 to 4 cu. ft. and in a temperature range from -10° F to -120° F.

A particular advantage for laboratories is said to be the large chilling capacity which is provided within floor space of 7.5 sq. ft.

Various optional features are available to meet specific testing requirements. To provide for close control of temperature throughout the chilling chamber, circulators for air or convection fluid are available. Where required, the lid can be equipped with a frost-proof observation window. When a window is provided, interior illumination is also installed. Entrance ports in the lid are also available when required.

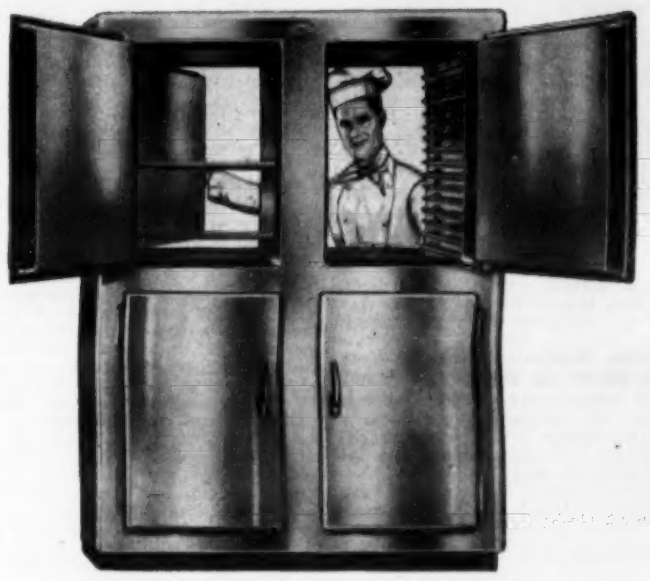
Instrumentation is provided as needed with either indicating or recording thermometers. Temperature control is adjustable from 25° F. to -125° F. The control knob is located inside the instrument cabinet to prevent unauthorized tampering.

For EASY SALES and FAST TURNOVER

FLEXOUNIT Stainless

TRADE MARK REGISTERED

Stainless Steel PASS-THRU Reach in REFRIGERATOR



- **LATEST** of 93 standard styles and models from 11½ cu. ft. to 73 cu. ft., including dough-retarders, salad refrigerators and reach-ins, all in self-contained and remote models.
- **LARGER COILS** for higher humidity (75 to 80%) and greater refrigeration efficiency.
- **THERMOPANE GLASS DOORS**—triple thickness—available on most models.
- **REMOVABLE STAINLESS STEEL** angle tray slides can be incorporated in any reach-in.
- **ALL METAL** construction, including doors.
- **5-YEAR WARRANTY** available on self-contained units.

Write for BROCHURE R-52-3 fully describing our complete line of refrigeration equipment.

STAINLESS FOOD EQUIPMENT CO.
272 New Street Newark 3, N. J.

The NEW LOOK!
IN FROZEN FOOD DISPLAY CASES

Beautiful, eye-catching two-tone gold and white styling.
Every package in direct contact with freezing plate. Assures proper temperature.
Capacity: 720 packages (size illustrated).
Small size: 350 packages.

BTC

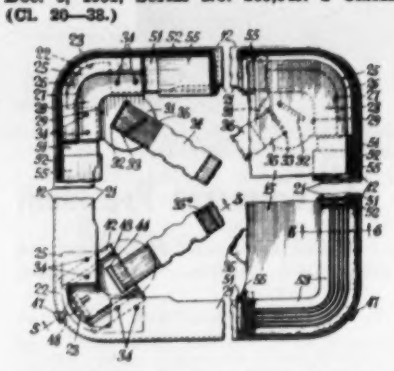
Complete details and illustrated color brochure on request.

The BREWER-TITCHENER CORP.
Refrigeration Sales: 80 W. Broad St.
Mount Vernon, New York

PATENTS

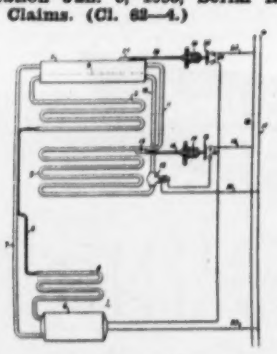
Week of December 23

2,622,284. REFRIGERATOR DOOR OR LID. Clare H. Kafer, Palmyra, Mich., assignor to Revco, Inc., Deerfield, Mich. Original application Oct. 27, 1948, Serial No. 56,725. Divided and this application Dec. 5, 1951, Serial No. 260,049. 2 Claims. (Cl. 20—38.)



1. A refrigerator door comprising a rectangular pan having a front, depending sides, and inwardly projecting flanges extending around the perimeter of the pan, gusset plates secured to the flanges on at least two adjacent corners of the pan, said plates having inwardly extending brackets disposed below the plane of the flanges, said plates being formed with pairs of angularly disposed elongated slots, one of which is normal to the diagonal at each corner, diagonally disposed flat straps having an end looped through the normal slot at two adjacent corners of the pan, and anchoring members at the opposite corners of the pan connected to said straps and holding them under tension.

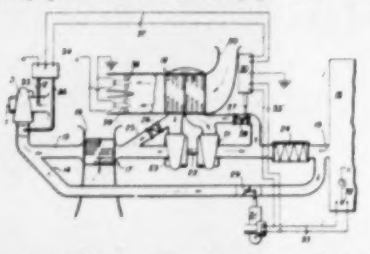
2,622,405. TWO-TEMPERATURE REFRIGERATING SYSTEM. Charles S. Grimshaw, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application Jan. 6, 1950, Serial No. 137,136. 5 Claims. (Cl. 62—4.)



1. A refrigerating system comprising a condensing unit, a low temperature evaporator and a header connected in closed series refrigerant circuit, said header having liquid refrigerant therein, a higher temperature evaporator, a first conduit for supplying liquid refrigerant from said header to said higher temperature evaporator, said conduit being connected to said header below the level of liquid refrigerant therein, a second conduit for conducting vaporized refrigerant from said higher temperature evaporator to said header, said second conduit communicating with said header above the level of liquid refrigerant therein, means for withdrawing vaporized refrigerant from said header and returning it to said condensing unit, a valve in said first conduit for controlling flow of refrigerant to said higher temperature evaporator, means dependent on the temperature of higher temperature evaporator for controlling said valve, and a temperature-responsive element positioned on said header above the level of liquid refrigerant therein for controlling the operation of said condensing unit.

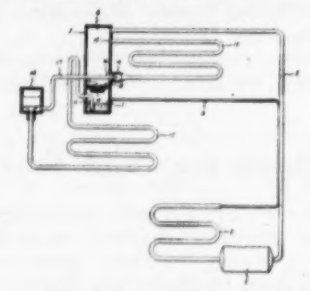
2,622,406. AIR CONDITIONING SYSTEM FOR ENCLOSURES. Paul C. Scofield, Glendale, and Homer J. Wood, Sherman Oaks, Calif., assignors to The Garrett Corp., Los Angeles, Calif., a corporation of California. Application Sept. 2, 1950, Serial No. 182,904. 12 Claims. (Cl. 62—6.)

1. An air conditioning system, comprising: means for conducting air from a source of air under pressure to an enclosure; means for conditioning said air prior to delivery to said enclosure, including means for cooling said air and converting energy in said air into mechanical energy; a by-pass around said energy converting means only; a by-pass around said conditioning means; valves respectively positioned in said by-passes; means



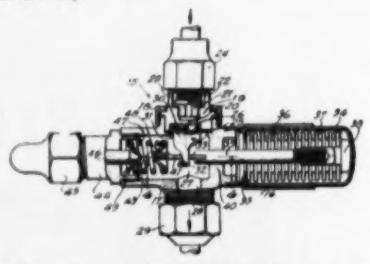
for controlling said valves in response to variations in a desired characteristic of said enclosure; and means for modifying the actuation of at least one of said valves upon the occurrence of a predetermined condition at said source.

2,622,407. TWO-TEMPERATURE REFRIGERATING SYSTEM. Harley H. Bixler, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application Jan. 10, 1952, Serial No. 265,812. 3 Claims. (Cl. 62—6.)



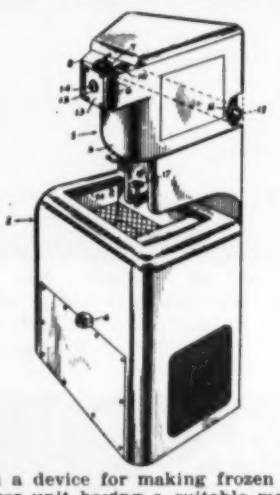
1. A refrigerating system comprising a vertical header divided into upper and lower chambers, a refrigerating unit supplying liquid refrigerant to said lower chamber and exhausting vaporous refrigerant from said upper chamber, a freezer evaporator having both sides thereof connected to said upper chamber, a fresh food evaporator having one said thereof nected to said upper chamber, a fresh tending below the normal level of a liquid reserve therein, injecting means in said upper chamber directing refrigerant from said fresh food evaporator into said freezer evaporator, means providing communication between said upper and lower chambers, and controlling means operated in response to operation of said refrigerating unit to block communication between said chambers thereby to permit an accumulation of pressure in said lower chamber for the prompt supply of liquid refrigerant therefrom and the collection of liquid refrigerant in said upper chamber for supplying said injecting means, said controlling means affording communication between said chambers during idle periods of said refrigerating unit thereby to permit drainage of liquid refrigerant from said upper chamber into said lower chamber to replenish said liquid reserve in said lower chamber.

2,622,408. EXPANSION VALVE. William A. Ray, North Hollywood, Calif., assignor to General Controls, Co., Glendale, Calif., a corporation of California. Application Jan. 10, 1947, Serial No. 721,233. 1 Claim. (Cl. 62—8.)



In a refrigerating system including an evaporator; a thermostatic expansion-valve comprising a metallic casing having aligned inlet and outlet passages and an outlet-chamber therebetween, valve means for controlling flow of refrigerant through the casing to said evaporator, a thermal motor, mounted on the wall of the casing which defines said outlet-chamber, comprising an expansible-contractible bellows and encompassing cup-shaped metallic member joined to the bellows to form a pressure chamber containing thermally-expansible fluid, said cup-shaped member being joined directly to said casing-wall so that it protrudes therefrom in a direction generally at right-angles to the axis of said passages, and a stem connected to said bellows and extending through a conforming opening in said casing-wall for operating said valve means, said metallic casing-wall serving to permit limited thermal transfer between the thermal motor and the refrigerant in said outlet-chamber so that the operation of the motor is influenced by the temperature of the refrigerant passing to the evaporator; and means for mounting the valve in the system with said cup-shaped member in thermal contact with a portion of said evaporator adjacent its outlet end.

2,622,411. ICE-CREAM MAKING MACHINE. Hubert S. Ogden, Los Angeles, Calif., assignor to New Process Confection and Beverage Corp., Dallas, Tex., a corporation of Texas. Application June 12, 1950, Serial No. 167,684. 2 Claims. (Cl. 62—114.)



1. In a device for making frozen malts; a freezer unit having a suitable means of support, a freezing chamber within the unit having a vertical cylindrical wall which terminates at its bottom into a frusto-conical discharge opening, an agitator in chamber having blades shaped to remove frozen material from the wall and for feeding material to the discharge opening, means for freezing the chamber, a door pivoted to the discharge opening, a container support platform pivoted to the device for vertical movement, means for opening and closing the door by movement of the platform, a valved hopper means at the top of the chamber having a feed tube which conducts the material to be frozen directly into the top portion of the chamber.

(To Be Continued)

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Government Contracts

PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the various indicated U. S. Government procurement offices. This list is compiled and made available daily on a free pick-up basis. Prospective bidders may obtain complete bid sets by a request **to the purchasing officer under which the purchase is listed** in this Synopsis. Be sure to identify completely the bid invitation you wish by including in your request the item description, the invitation number or reference number and the opening date. This will save time in filling your request. For reasons of economy, specifications are normally not included with the bid invitations unless the specification is a new one. First time bidders on a particular item should request a copy of applicable specifications and drawings at the time the request for a bid is made.

It is not necessary to refer solely to the issuing office for additional data on a bid invitation issued by any of the following U. S. Army Ordnance Offices: Ordnance Tank Automotive Center; Detroit Arsenal; Frankford Arsenal; Picatinny Arsenal; Raritan Arsenal; Ordnance Ammunition Center, Joliet, Ill.; Rock Island Arsenal; Springfield Armory; Watertown Arsenal; and Watervliet Arsenal. Complete information on any purchase listed by any of those offices alone can be obtained from the Ordnance District Office nearest you. Its address is on file in your nearest Department of Commerce Field Office. Do not ask an Ordnance District Office for information on a purchase unless it is listed by one of the above-named offices. **Ordnance District Offices do not have information on any other purchases.**

Invitations for Bids numbers will be followed by the letter "B." Requests for proposals or quotations will be indicated in this column by the letter "Q" or, if numbered, the number will be followed by the letter "Q."

DEPARTMENT OF DEFENSE

Description	Quantity	Invitation No.	Opening Date
Corps of Engineers, New England Div., U. S. Army, 857 Commonwealth Ave., Boston, Massachusetts			
Construction of armament and electronics shop consisting of one-story concrete block building approximately 30,000 sq. ft. of floor including heating and ventilating systems at Limestone Air Force Base, Limestone, Maine. Deposit required $25 for plans and specs.	Job	(ENG-19-016-53-123B)	4 Jun 53
Construction of AAA support facilities consisting of one 300-man mess hall one story, wood framed, 100' by 50' and 3 dormitories wood framed, 2 story 180' by 35' including heating and ventilating at Limestone Air Force Base, Limestone, Maine. Plans and specs. available approximately 7 May 1953. Deposit required $25.	Job	(ENG-19-016-53-129B)	5 Jun 53
Officer in Charge, Navy Purchasing Office, Washington, D. C.			
Air conditioner unit complete with fans, pump, Trane Co. 1D2SCW 84 type SDS or equal.	29	3334-Q	29 May 53
Supply Officer, Philadelphia Naval Shipyard, Philadelphia 12, Pennsylvania, Attn: Purchase Section			
Air condition and humidity control unit for 5338.5 cu. ft. area.	1 ea.	(516-10532-53)	21 May 53
Air condition and humidity control unit for 4400.5 cu. ft. area.	1 ea.	(516-10532-53)	21 May 53
Post Purchasing & Contracting Office, Hq. 5th Armored Div., Camp Chaffee, Arkansas			
Gas fired furnace	Job	53-28B	27 May 53
Rome Air Development Center, Griffiss Air Force Base, Attn: RCMC, Rome, New York			
Air conditioning units for Wickes Communication Vans in accordance with Rome Air Development Center Exhibit RADC-2289, dated 19 Feb. 1953, titled 'Air Conditioning Units for Wickes Communication Vans" and Exhibit TSELT-174C, dated 2 Jan. 1952, titled "Miscellaneous Requirements for Electronic Materiel," as follows:		(30-602-53-146)	29 May 53
For Transmitter Vans	9 ea.		
For Receiver Vans	9 ea.		
For Communications Center Vans.	4 ea.		
93rd Bombing Wing, Castle Air Force Base, California			
Invitation for Bid /B/ and Requests for Proposal /Q/ are distributed to firms listed in the Bidders List maintained by the above activity. A complete bid set is available for EXAMINATION ONLY by prospective bidders at the Air Regional Offices located in the local trading area of the above activity.			
Instl. of coolers and exhaust fans.	Job	(IFB-04-604-53-34-B-No. Castle 55-51-Rev-3A)	27 May 53
Officer in Charge of Construction, U. S. Naval Station, New Orleans, Loisiana			
Air conditioning of Bldg. 253 Naval Station, New Orleans, Louisiana.	Job	38357	2 Jun 53
Purchasing & Contracting Office, 3800th Air University Wing, Maxwell Air Force Base, Alabama			
Installation of ventilation fans in a selected group of bldgs. at Maxwell Air Force Base, Alabama.	Job	(01-600-53-109)	26 May 53
Installation of one air conditioning unit and metal awnings, building 205, Gunter Air Force Base, Ala.	Job	(01-600-53-106)	25 May 53
Memphis District, Corps of Engineers, P.O. Box 97, Memphis, Tennessee			
Semi-trailers, 10 ton refrigerated	2 ea.	(CIVENG-40-041-53-141B)	3 Jun 53
Corps of Engineers, Detroit District, 1900 Cadillac Tower, Detroit 16, Michigan			
Constr. of modification of Central Heating Plant including all related work necessary and appurtenant thereto at 30th Air Div. Hq., Willow Run, Ypsilanti, Mich.	Job	(ENG-20-064-53-62B)	5 Jun 53
Chicago Quartermaster Depot, Quartermaster Purchasing Div., Chicago, Illinois			
Bid Forms Now Available, Do Not Request After Opening Date.			
Dispenser drinking water mechanically cooled, spec. OO-C-00566B/ GSA-FSS/	270 ea.	53-1064B	25 May 53
Bureau of Ships, Washington, D. C.			
Dehumidifiers desiccant electric for use on inactive naval vessels suitable for installation in the weather spraytight case includes desiccant bed reactivation heaters absorption and reactivation fans cycling valves motors and controls, spec. MIL-D-15215 Ships, 1 Sept. 1950.	1555	549-653Q	22 May 53

GENERAL SERVICES ADMINISTRATION

Description	Quantity	Reference No.	App. Bid Date
Business Service Center, General Services Administration, Region IV, 50 Whitehall St., S.W., Atlanta 3, Georgia			
Air conditioning equipment Knoxville Filter Center, Knoxville, Tenn.	Job	CR 4-473	22 May 53
Business Service Center, General Services Administration, Region 3, Washington, D. C.			
Refrigerator, biological, two door.	5 ea.	4H-22446-RN	29 May 53
Refrigerator, all steel, walk-in type.	1 ea.	4H-22446-RN	29 May 53
Spare parts for walk-in type refrigerator.	1 lot	4H-22446-RN	29 May 53

U. S. DEPARTMENT OF AGRICULTURE

Procurement Officer, Bureau of Dairy Industry, Department of Agriculture, Washington 25, D. C.			
Histological freeze-drying unit	1	(35-BDI-DC-53)	19 May 53

CONTRACTS AWARDED THROUGH MAY 11

Officer in Charge of Construction, Bureau of Yards and Dock Contracts, Japan Navy No. 3923, Box 61, Care of Fleet Post Office, San Francisco, California
Installation of air conditioning equipment in operating room at the U.S. Naval Hospital, Yokosuka, Japan. NOy-76059.—Job, $3,250,000.—Kabushiki Kaisha Taguchi Gumi No. 1-2, Chome, Makicho, Chuc-ku, Tokyo, Japan.

Quartermaster Activities, Army Base, Boston 10, Massachusetts
Fabrication, furnishing and installation of air conditioning, ventilation and refrigeration system. (Invitation and bid QM-10-129-5312).—11 systems, $52,690.—A. Belanger & Sons, Inc., 42 Brookford St., Cambridge 40, Mass.

Bureau of Ships, Washington, D. C.
Ice cream making equipment,95; condensing unit,3 (549-482).—$383,103.—The Bastian-Blessing Co., Grand Haven, Mich.

General Services Administration, 575 U.S. Courthouse, 219 S. Clark St., Chicago, Illinois
Water coolers.—246 ea., $28,290.—Westinghouse Electric Corp., 1625 K St., Washington 6, D. C.

General Services Administration, Public Buildings Service, Central Office, Washington, D. C.
Bethesda, Md., National Institutes of Health, alterations and changes to heating systems of air conditioning in Buildings 1, 2, 4, 5, and 7.—Job, $75,200.—John C. Grimberg Co., 4700 Tanglewood Dr., Hyattsville, Maryland.

District Public Works Office, Eighth Naval District, New Orleans Louisiana
Additional air conditioning in building #157 at the U. S. Naval Station, New Orleans, La. NOy-76517.—Job, $31,801.—West Bank Electric Co., 307 Pacific Ave., Algiers, Louisiana.

U. S. Naval Air Station, Corpus Christi, Texas
Domestic type electrical refrigerators (8 cu. ft. capacity).—217 ea., $28,199.—Westinghouse Electric Supply Co., 110 N. Water St., Corpus Christi, Texas.

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HOW TO APPLY VALVES

By A-P Controls Corp., Milwaukee

This is the first of a series of articles devoted to a discussion of the functions and applications of various valves used for the control of air conditioning and refrigeration systems.

It is based on excerpts from the excellent "Product Application Manual" recently prepared by the sales department of A-P Controls Corp. of Milwaukee and is published with permission of the company.

First section of the manual (and this series) is devoted to automatic expansion valves. Also discussed will be thermostatic expansion valves, evaporator pressure regulating valves, solenoid valves, and condenser water regulating valves.

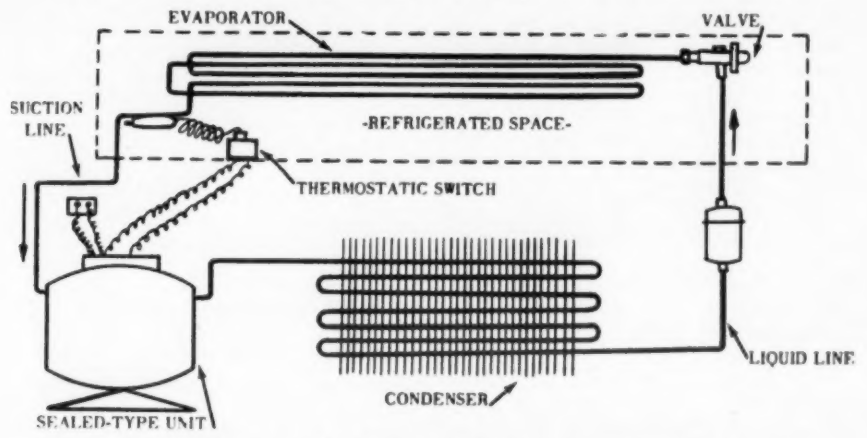

Fig. 1 is a schematic view of a system employing an automatic expansion valve.

Automatic Expansion Valves (1)

VALVE OPERATION

Automatic expansion Valves have long been standard in the refrigeration industry as refrigerant metering devices. Standard automatic expansion valves are designed to close at the end of the running phase of the refrigeration cycle and to remain closed to prevent the flow of refrigerant to the evaporator during the machine's off phase.

At the beginning of the next running phase, the automatic expansion valve is designed to open and meter refrigerant flow to the evaporator to maintain a constant low-side pressure regardless of the length of time the equipment is operating.

This maintenance of a constant low-side pressure during the operating phase of the refrigeration cycle is the outstanding feature of automatic expansion valve operation.

MAINTENANCE OF CONSTANT LOW-SIDE PRESSURE

The flow of refrigerant to the evaporator is maintained by an automatic expansion valve at a rate equivalent to the pumping capacity of the refrigeration compressor. The fact that automatic expansion valves will open and remain open at a point where the refrigerant flow exactly meets compressor pumping capacity accounts for the low-side pressure (and therefore, evaporator temperature) maintained during the operating phase of the refrigeration cycle.

To prevent possible flood-backs to the refrigeration compressor during machine operation, especially near the end of the running phase of the cycle, it is necessary to either (1) adjust the automatic expansion valve to provide a flow gauged to the minimum heat load on the equipment, or (2) to employ a thermostatic switch with thermal bulb attached at the evaporator outlet. The thermostatic switch thus installed will open the electrical circuit and stop the condensing unit when liquid refrigerant closely approaches the switch thermal bulb.

Not only will flood-back of liquid to the compressor be thus prevented, but control of box temperature will be effected as the presence of refrigerant liquid near the evaporator outlet of a properly designed system will indicate that proper reduction of fixture temperature has been accomplished.

The use of a thermostatic switch in this manner was long a feature of domestic refrigerators employing automatic expansion valves as refrigerant controls.

BALANCE IN SYSTEM

Balance in a refrigerating system employing an automatic expansion valve is, therefore, between expansion valve and condensing unit. Inasmuch as an automatic expansion valve is a differential type of valve, the differential between opening point of the valve and operating point is automatically established by the running of the machine at the point where refrigerant flow into evaporator is sufficient to meet the pumping capacity of refrigeration compressor.

VALVE APPLICATIONS

Automatic expansion valves are ideally suited to refrigerating applications in which heat load conditions are fairly constant, or in applications where control of evaporator temperature is required. Inasmuch as automatic expansion valves meter the flow of refrigerant to the evaporator in proportion to compressor pumping capacity, little provision is made for variation in refrigerating capacity to meet fluctuating heat load conditions.

On the other hand, applications such as water coolers, refrigerators, home freezers, room air conditioners, and other small constant load applications operate in excellent manner with this type of expansion device.

(To Be Continued)

Westinghouse Suit Claims Fair Trade Law Violated

PITTSBURGH — Westinghouse Electric Corp. has filed suit in the Court of Common Pleas of Allegheny county charging The Hill Co. of Pittsburgh with violating the Pennsylvania fair trade law by selling electrical housewares at below fair trade prices.

The company asked the court to issue an injunction restraining the dealer from selling at retail any Westinghouse appliances "at prices which are less than the minimum retail prices" established by Westinghouse. Judge Samuel A. Weiss issued a preliminary injunction to be in effect up to the date set for hearing.

In commenting on the court action, a company spokesman said the suit was brought to enforce contracts "after a recent warning to all Westinghouse dealers that fair trade prices would be enforced." He promised that similar suits will be brought "whenever and wherever it may be necessary to take such action to maintain fair trade prices in the 43 states having fair trade laws."

UNUSUAL OPPORTUNITY IN SOUTHERN CALIFORNIA

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BOX NO. 4302, AIR CONDITIONING & REFRIGERATION NEWS

INNER-DOOR REFRIGERATOR PANELS, molded by General American Transportation Corp. for Westinghouse, include the largest pieces ever mass-produced by the injection process. They were shown during a recent General American exhibit in New York City.

Injection Molded Parts for Refrigerators Grow In 'Size' and Applications

NEW YORK CITY—Colored refrigerator inner-door panels—described as the largest pieces ever molded by the injection process in mass projection—were among the important pieces recently exhibited here by the plastics division of General American Transportation Co.

The three-day show in the Hotel Plaza attracted a large attendance of engineers, designers, and manufacturers.

Servel's "Wonderbar," for which General American molds all nine plastics parts, was shown. Other refrigeration and air conditioning items were housings, grills, reinforced plastic drip-pans, and evaporator doors.

The largest refrigeration panels on display measured almost 60 in. by 32 in.

"We now have plenty of evidence to offer in support of our conviction that the plastics industry has become a mature, reliable, and essential part of our industrial life," Frank E. Selz said as he opened the special show. Selz is assistant to the president, and in charge of the company's plastics division.

"The day is definitely gone when properly fabricated plastics can be dismissed as a substitute material, or as unreliable in performance," Selz said. "The recent introduction of many carefully designed, important plastic pieces has helped change it."

In support of his statement, Selz pointed to some of General American's plastics products—the refrigerator inner-door panels for Westinghouse and International Harvester; radio and television cabinets for Philco and Westinghouse; battery cases for the government and Gould-National; air conditioning parts for Fedders Quigan; the Servel Wonderbar; and street-lighting globes for General Electric.

General American Transportation entered the plastics field as custom molders in 1945, and now believes that it has the country's greatest battery of large-capacity injection and compression presses. It also recently opened its third Chicago plastics plant, marking its start in reinforced plastics, and making it one of the few firms that use all three of the basic processes.

General American's injection presses include three 300-oz. presses, said to be the largest in use anywhere, and its compression presses include three 2,000-ton presses. It has a total of 57 presses, and is currently adding additional low-pressure ones. Among its other reinforced plastics facilities is a large range of performing equipment.

Kramer Trenton Conducts 4-Day Sales Conference

TRENTON, N. J.—Sales representatives from territories throughout the United States, except for Pacific coast representatives, attended a four-day sales conference at the Kramer Trenton Co. plant here.

An intensive series of meetings were directed by S. Charles Segal, Kramer's general sales manager. Nathan and Israel Kramer, company officials, addressed several of the sessions.

Every Kramer department was represented at the conference-style meetings. Factory sessions included a complete study tour of the entire plant facility and the extensive Kramer laboratory.

Receiving major attention at the sessions were advancements in engineering and design of new and improved Kramer equipment. Production plans for the balance of 1953 were also discussed, as were advertising programs and literature being prepared to cover all new Kramer advancements.

M-H Promotes Ridley, Others on Sales Staff

MINNEAPOLIS — Doug Ridley, formerly branch manager of the New Orleans sales office of Minneapolis-Honeywell Regulator Co., has been promoted by the firm to regional commercial sales manager of the southwest region.

His appointment is one of several field staff changes recently announced by the company.

Hank Leichtenberg, former district manager at Madison, Wis., succeeds Ridley as branch manager at New Orleans.

Norm Rutgers, formerly a heating division salesman at Detroit, has been named branch manager at Des Moines, Iowa, succeeding Wayne Peterson who becomes branch manager at Hartford. John Feigenbaum, formerly manager at Hartford, is taking on a special assignment there for the company's heating controls division.

Bill Stuewe, formerly a heating controls division salesman in Salt Lake City, has been appointed branch manager in Salt Lake, succeeding Eldon Richardson, who recently was transferred to the company's executive offices in Minneapolis as home market supervisor.

Ed Bruder, regional office manager of the central region at Cleveland, has been transferred to New York City in a similar capacity.

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POSITIONS AVAILABLE

MIDWESTERN REFRIGERATION and air conditioning manufacturer needs an experienced service manager. Must be able to organize service department and handle customer complaints. Must be familiar with air conditioning and refrigeration installations and equipment. Age range 35-45. Salary open. Address replies, giving full details of work history to BOX 4269, Air Conditioning & Refrigeration News.

EXPERIENCED REFRIGERATION engineers. A progressive Midwestern manufacturer, well established, has openings for graduate Refrigeration Engineers experienced and well qualified in portable air conditioning units, development and test. Also a metal shop head who can handle men and produce samples of all types of refrigeration appliances. Submit a resume of your education, experiences and complete background. State your salary requirements. Interviews will be arranged. BOX 4300, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WE ARE in the market for 1500 old 145 lb. Freon Cylinders with valve & cap intact. Convert useless inventory to cash. Write EVERGREEN INDUSTRIES, 630 Colonial Ave., Pelham Manor, N. Y.

EQUIPMENT FOR SALE

NEW UPRIGHT freezer—21 cubic feet; over 700 lb. capacity; Modern design; gleaming white exterior; extra-quick freezing with freezer plate shelves. Complete with ½ h.p. Chieftain sealed unit self-contained: Ranco Temperature Control; F-23 Gas. Dealer Price $349.00. Special discount for quantity. GENERAL REFRIGERATORS CORP., 2011 First Ave., N.Y.C. ENright 9-0200.

DISTRIBUTORS, WHOLESALERS wanted. Sensational Air conditioner condensate disposal unit 9 inches high, eleven wide, 4½ thick. Complete tank pump float and check valve. Pumps to a 12 foot head, 46 gallons at 10 ft. Outstanding patent features makes K40 the greatest value on the market. List $50, retails 20% off, 220 volt, add $3.90. KESCO PRODUCTS CORP., 115-31 Sutphin Blvd., Jamaica 4, N. Y.

BUSINESS OPPORTUNITIES

MICHIGAN'S LEADING wholesale Hermetic Rebuilding Business. Completely equipped. Can support 2 partners and 2 men the year round. Will sell for approximate inventory of $12,000. BOX 4304, Air Conditioning & Refrigeration News.

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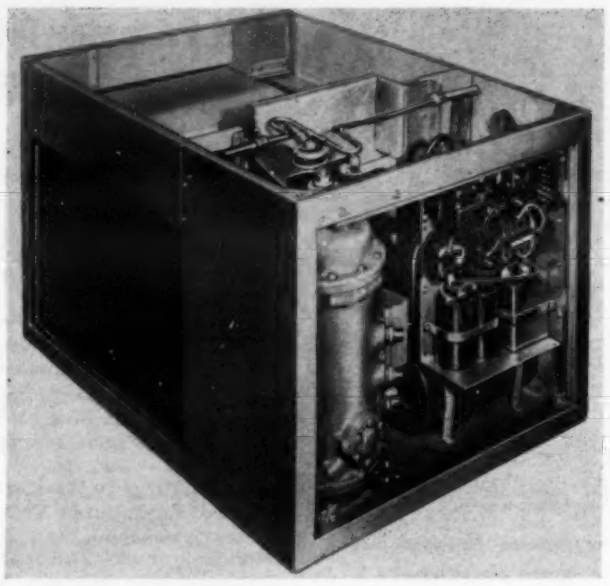
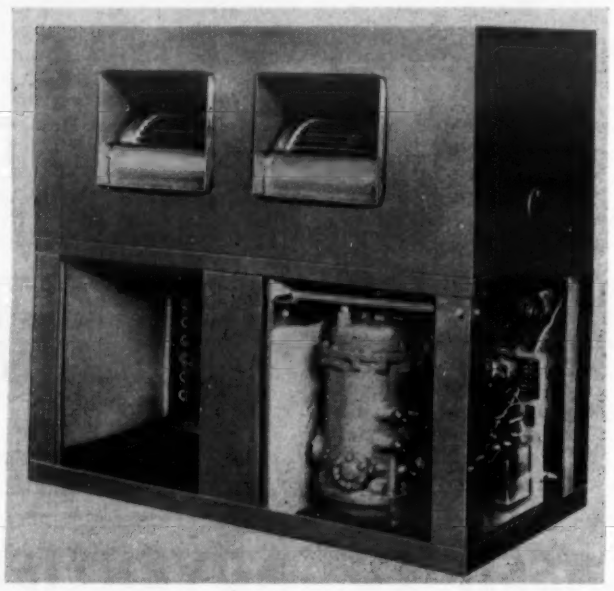


CONDENSING UNIT 'PACKAGE' FOR AIR-COOLED AIR CONDITIONER is this unit developed by Chrysler Airtemp. It is meant for installation outside the home, or at least outside the conditioned area, and would be connected to the cooling coil by refrigerant lines.



'PACKAGED' AIR-COOLED RESIDENTIAL AIR CONDITIONER also introduced by Airtemp has condensing unit, cooling coil, and blower all in one cabinet, and is said to be small enough to fit handily in attics, utility rooms, and in sub-floor crawl space.

Airtemp Air-Cooled Air Conditioner--

(Concluded from Page 1, Column 3)

and connecting rod inserts provide high fatigue resistance and high load capacity. A new high-speed starting torque loader is said to produce full operating speed in 1/20 of a second. "Freon-12" is used in the 2-hp. model, "Freon-22" in the 3-hp. air conditioner.

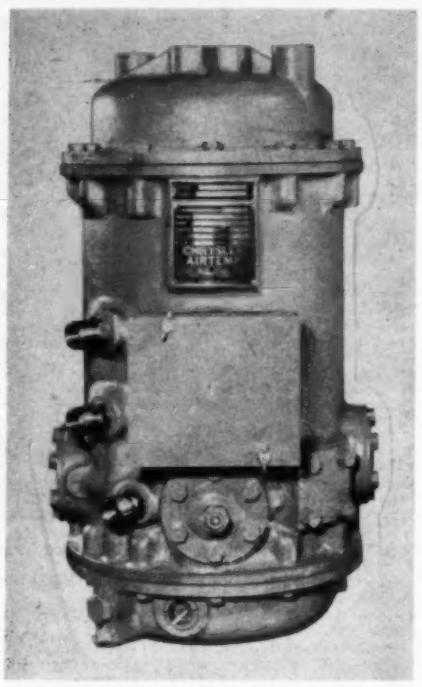
The smaller, high-speed compressor is created with making possible the very compact design of the new Airtemp air-cooled residential air conditioner. This air conditioner will be promoted heavily as requiring no water usage or water piping.

In the "custom" air-cooled residential model a condensing unit package is installed outside of the home. This package consists of the compressor and condenser, the latter having its own fan and fan-motor. Refrigerant tubing lines from this package are then run to the cooling coil in the main furnace air discharge duct.

The all-weatherproof condensing unit package stands 22 in. high, 36 in. deep, and 27 in. wide. Enclosure is a fully-insulated, rust-resistant Bonderized steel cabinet.

The complete packaged self-contained air-cooled conditioner, which is small enough to fit in attics, utility rooms, and in sub-floor crawl space, stands 40 in. high, 40 in. wide, and 22 in. deep.

C. E. Buckholzer, Airtemp's president, declared that the life expectancy of the new 3500 r.p.m. compressor should be considerably longer than the average eight-to-ten year life of a reasonably-cared-for automobile engine. He also said that the 4-cylinder design establishes new standards of quietness.



OPERATING AT 3,500 R.P.M. is this new Chrysler Airtemp four-cylinder sealed radial compressor, now being made in 2-hp. and 3-hp. models. It stands 18 in. high and is 9½ in. in diameter.

Schultz Opens New Offices, Showroom, Plant in N. Y.

NEW YORK CITY—The Shultz Co., distributor of Hill display cases, has announced the opening of its new offices, showroom, and factory at 44 W. 143rd St. here.

The company said the present factory at 19-49 41st St., Long Island City, will remain in operation as its Long Island branch.

One for Each Floor

2 Systems Cool, Heat Aviation Engineering Office Building

NEW YORK CITY—The Aviation Engineering Corporation, manufacturer of aircraft instruments in Woodside, Queens has air conditioned its new two-story administration building with two zoned all-year systems utilizing self-contained UsAirco central station equipment.

The new structure, at the corner of Northern Boulevard and 60th St., houses the company's accounting department, executive offices, and telephone switch room on its first floor. The second floor space is occupied by the engineering department offices and a model shop.

Two United States Air Conditioning Corp. 20-ton RK units, which contain all of the elements of a central plant including evaporative condenser in a single compact cabinet, are located in the basement and are connected by ductwork to the main floor rooms.

On the second floor, an RK-20 and an RK-25 in a small equipment room furnish conditioned air to the offices and model shop. The separate systems for the two floors are each controlled by a two stage thermostat for economical operation. All of the RK units are equipped with steam coils for year-round operation, according to reports.

The equipment was installed by Weathermatic Corp., Long Island City contractor.

Industrial User Price--

(Concluded from Page 1, Column 4)

have a graduated scale as follows:

"1. Manufacturers' prices (to be used only when the equipment becomes an integral part of the manufactured article).

"2. Wholesalers', jobbers', or distributors' price.

"3. Price to contractors for resale.

"4. Industrial user price where they maintain their own service and installation department.

"5. Consumer price.

"This appears to be in accordance with the Federal Trade Commission principles relating to functional discounts. There is no question that the function of each of these groups is different and the price to the contractor or dealer who resells and maintains a steady request for orders for resale should be lower by a substantial margin than that to the industrial user . . .

"Is there any reason why such a graduated price list should not be placed in effect at this time?"

SMI Convention--

(Concluded from Page 1, Column 3)

morning, May 25, will be devoted to advertising and promotion methods. Most of the participants will be supermarket operators.

In the Tuesday session on better store operations, topics slated for discussion include self-service meats, produce department operations, lighting, shelving, and others.

Final business session Wednesday morning has scheduled several talks on personnel problems in supermarkets.

Trane's Columbia Office Moved to New Location

LA CROSSE, Wis.—The Trane Co. announces that the new location of its Columbia, S. C., sales office is 2740 Devine St. Arthur M. Suggs is the sales engineer in charge of the office.

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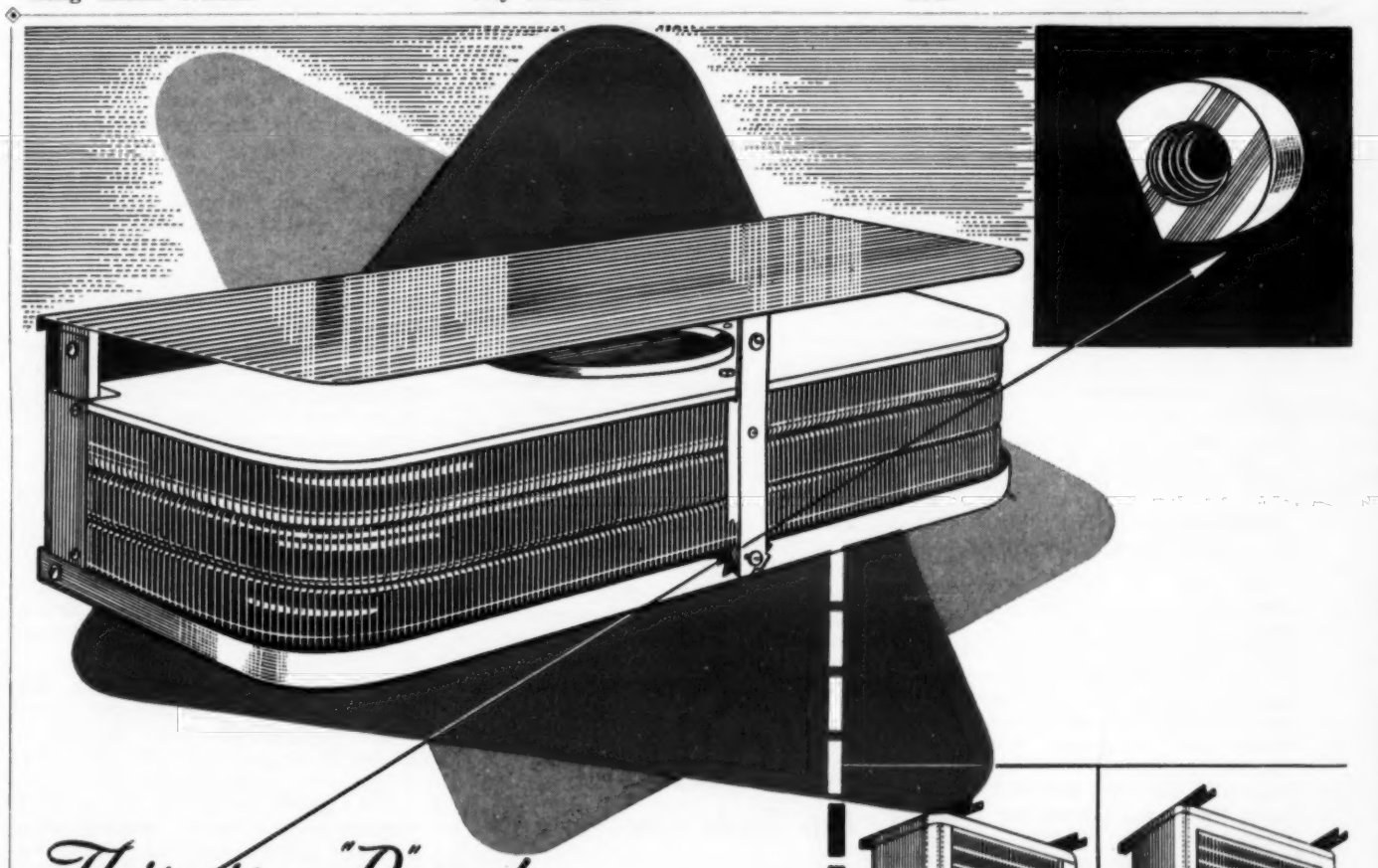

This is a "D" nut a fine point of quality

A small part . . . but an important one. Another assurance that Bush Unit Coolers are the finest available.

On ordinary unit coolers, sheet metal screws are used to join pan to case. Bush units are constructed with "D" nuts threaded to take small bolts. These "D" nuts are hydraulically riveted to the sheet metal. Result: a connection that doesn't loosen.

Remove the pan and replace it as often as you like. The connection will remain snug . . . free from annoying, noisy vibration.

The "D" nut . . . another fine point typical of Bush quality construction.

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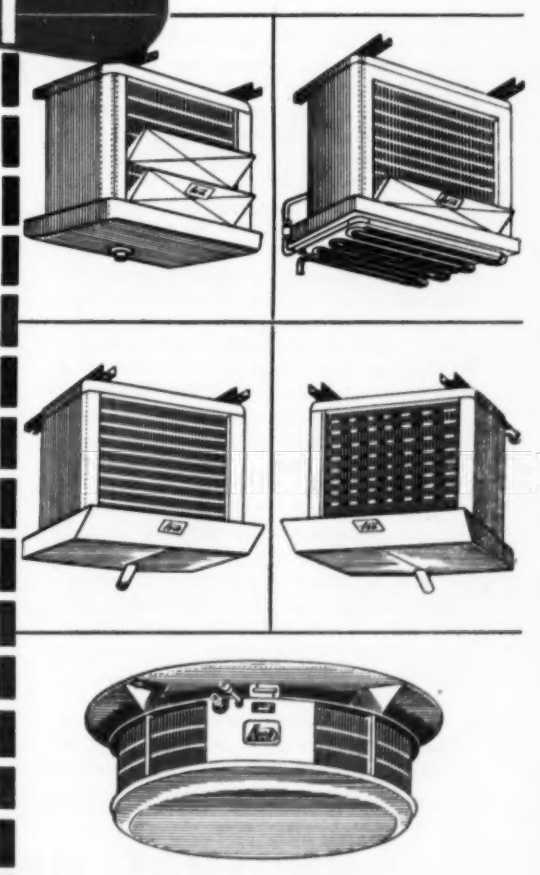
- Full, Deep Plenum Chambers
- Underwriters Laboratory Approval of All Units
- CJ and WJ Lines Feature Air DRAWN THROUGH the Coil Rather than Blown Out Across the Coil. This Eliminates Blowing Condensation from the Outer Edge of the Coil onto the Product or Box
- Heat Interchangers Furnished on Most Models



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